

ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 3



MARCH, 1954

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Published monthly by the Arizona Medical Association. Business office at 407 Heard Building, Phoenix, Arizona. Subscription \$3.00 a year, single copy 25c. Entered as second class matter March 1, 1921, at Postoffice at Phoenix, Arizona, Act of March 3, 1879.

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ARIZONA MEDICINE

Journal of Arizona Medical Association

VOL. 11, NO. 3



MARCH, 1954

Original ARTICLES

CANCER OF THE COLON

Lewis W. Guiss, M.D.*

Los Angeles

THE SUBJECT of cancer of the colon is a very important one from several view points. First, it is important because of the relatively high incidence of cancer of this organ both absolutely and also in relation to incidence of cancer in other organs. Cancer of the large bowel is responsible for approximately 40,000 deaths a year in the United States and probably at any given time there are from 3 to 4 times that number of people, who have as yet undiscovered cancer of the colon, who are being treated for it, or who have been treated and are either cured or will eventually develop recurrence and die of their disease. Cancer arising in this organ probably comprises about one-fifth of the total incidence of cancer in man.

This admittedly high incidence in itself, however, would not justify the time to be allotted to it this afternoon, were it not for the fact that cancer of the colon is also one of the most curable, if the disease is dealt with in any degree of promptness. Actually it has been stated that the possibility for a permanent cure is greater for cancer of the large bowel, than for cancer anywhere else within the body. In any of the larger clinics the resectability rate is somewhere between 80 and 90 per cent and the operative mortality is in the neighborhood of 5 per cent or less. In patients where a resection is possible over 50 per cent of the patients will prove to be 5-year cures, without regard to the presence or absence of nodal

metastases. When nodes are found to be free of metastases the cure rate approaches or exceeds 70 per cent at the end of 5 years. Great strides have been made in recent years in perfection of surgical technique, anesthesia, and in care of the patient, both pre- and post-operatively. This has resulted in an ever diminishing operative mortality, less morbidity, and shorter hospitalization. Yet during this same period of time there has been no apparent shortening of the time interval between the onset of symptoms and the time of treatment — the period continues to average somewhere around 8 months. Here in this organ, with an excellent chance for a cure, this curability is directly related to early diagnosis and treatment while the lesion is yet limited to the colon. The opportunity for early diagnosis belongs almost entirely to the general practitioner and to the internist who first see the patient.

What then are the pathognomonic symptoms which indicate the presence of cancer of the colon? It is regrettable that there are none. Every patient who presents himself with any sign or symptom pointing to the possibility of a colonic lesion must be regarded as having cancer of the colon until it is proved that he or she has not. Certainly the most common causes of bleeding, changes in bowel habit and so on, are not cancer of the colon, but the burden of this proof belongs to the physician and every such patient must be regarded as having cancer of the colon until this possibility is excluded. Unless this attitude is adopted, a patient with cancer of the colon will be cheated

*From the Department of Surgery, School of Medicine, University of Southern California. Presented at the Cancer Seminar of the American Cancer Society, Arizona Division in association with the Arizona Medical Association, Phoenix, Arizona, January 19, 1953.

of his excellent opportunity for cure for this condition. In a recent investigation (1) into a large group of patients coming to definitive treatment for cancer of the colon, it was depressing to find that one-fourth of them had had erroneous treatment for some other condition and that of 444 patients who had carcinoma of the rectum which could have been felt by rectal examination had it been done, that 102 of them had received treatment completely misdirected; 54 had surgery for hemorrhoids or other anal pathology and most of the remaining either had injection treatments for hemorrhoids or similarly useless therapy. It is difficult indeed, to understand how the true nature of the disease could have been missed during this miscarriage of treatment.

When considering the symptoms which might direct attention to the bowel, one should remember that the colon is about 5 feet in length and that from cecum to sigmoid the diameter gradually diminishes and becomes narrowest at the junction of the sigmoid colon and rectum. The primary function of the right colon is absorptive. The lumen of the bowel here, has its greatest diameter and the contents are liquid. Symptoms here therefore, are primarily the result of physiologic disturbances and obstructive symptoms are uncommon. Small lesions in this area are undoubtedly totally asymptomatic. By the time they are discovered they are usually quite large, cellular and ulcerated. The most common symptoms are those of unexplained severe secondary anemia, fatigue and occasionally weight loss. There is also frequently vague abdominal distress from some ill-defined source and not infrequently the patient himself has discovered a palpable mass. Progressing toward the rectum along the colon, the lumen becomes progressively narrower and the contents of the bowel less fluid. Smaller lesions therefore could be expected to cause earlier symptoms. For this reason patients with lesions of the left colon, usually exhibit the appearance of well preserved health. Symptoms here are most commonly changes in bowel habit and bleeding. Frequently there is an increase in constipation alternating with diarrhea with minor abdominal cramps and variable distention. As the rectum is approached there will be increased frequency of bleeding, more pronounced disturbance of bowel habit; it is not until the lesion impinges upon the anal canal that pain becomes an important symptom.

How then should these patients be dealt with who possess themselves of any of these varying symptoms suggestive of cancer of the colon and also the asymptomatic patient who presents himself because of fear of cancer, or for routine periodic examination, with cancer of the colon in mind because of familial history? Of first importance is a careful and, it should be emphasized, sympathetic history including leading questions to uncover vague symptoms which the patient may frequently discount as being of no importance. It is needless to state that this should be followed by a thorough physical examination and a careful rectal examination. Palpable masses will rarely be felt on abdominal examination, especially in early lesions, but a diligent rectal examination may be expected to reveal the presence of over half of the lesions arising in the colon. Proctoscopic and/or sigmoidoscopic examination should be done routinely for several reasons, not only for direct visualization of tumors in the rectum and lower sigmoid if present, but for inspection of non-malignant sources of bleeding such as polyps, and frequently to verify the fact that blood is actually coming from higher up the colon. Because of this latter point, many proctologists prefer to do their endoscopic work without prior preparation, such as enemas or castor oil. In general preliminary preparation makes the procedure much easier both for the patient and the physician, and there is less likelihood of missing small lesions. One can usually still see if there is blood coming from higher up, even after careful preparation. Biopsies should be taken at this time of all lesions no matter how obvious their nature. It should be stressed that 75 per cent of all colonic lesions occur in the rectum and sigmoid colon where they are readily discoverable by this simple maneuver.

The diagnosis of lesions beyond the reach of the sigmoidoscope depends almost entirely upon x-ray examination by barium enema, a subject which will be discussed in some detail by Dr. Garland. However, it should be stressed that it is the responsibility of every physician to do a rectal and endoscopic examination before the patient is sent to the radiologist for a barium enema, the most important reason being, that frequently small lesions in this area cannot be visualized even by the most skillful radiographic examination. No physician can "pass-the-buck" for the responsibility of establishing a diagnosis in such a case to the radiologist by ordering a

barium enema. The responsibility for finding cancer in the rectum and recto-sigmoid where 75 per cent of the lesions in the colon occur rests squarely upon the shoulders of the patient's own physician and pathology here should be ruled out before referral to the radiologist is made. A complete blood count is done to ascertain the degree and type of anemia if present, and some advise a routine stool for occult blood. There are those who advocate various Papanicolaou techniques for assistance in diagnosis of these colonic lesions. They might very well be reserved for suspicious cases in which careful examination fails to reveal the cause for symptoms and thus encourage the physician to continue his investigation. There seems to be little indication for the routine use of cytological methods in such cases.

Now what are some of the diagnostic pitfalls in establishing a diagnosis for cancer of the colon? First of course, and most common, is the discovery of hemorrhoids or some other cause for bleeding or symptoms in the anal canal. Too often the examining physician and patient are satisfied by such discovery and are content at least for a while to treat this pathology. It will be recalled that one-fourth of patients with palpable tumors are still so mismanaged. Even with discovery of such pathology low in the gastro-intestinal tract, the examining physician is still obligated to rule out higher pathology and every such patient is entitled to proctoscopy and sigmoidoscopy, and if these are negative should have a barium enema before having treatment of hemorrhoids. Occasionally, the discovery of an ulcerative colitis apparently accounts for the patient's symptoms, but it should not be forgotten that patients with ulcerative colitis are 100 times more prone than the average person to develop cancer of the colon(2). More common is the roentgenographic discovery of diverticulosis with diverticulitis which may falsely give a sense of security. It must not be forgotten that this condition is quite common and that its presence is no insurance against a superimposition of a colonic cancer. Lastly, there is the patient who after a careful and complete work-up fails to have any demonstrable pathology, yet returns complaining of continuing symptoms. One should not have the slightest hesitation in asking the patient to resubmit to the entire diagnostic procedure. It should be remembered

that no examination is infallible and that small lesions can easily be missed. Complete re-examination is the only insurance available at present to prevent missing these small, early, yet symptomatic lesions.

In regard to treatment of cancer of the colon there is but one treatment at the present time and that is prompt and adequate resection of the primary lesion together with the regional lymph nodes. There is not the time this afternoon nor is this the place to go into technical discussions of various types of surgery. Suffice to say that the patient should be carefully prepared pre-operatively, blood, vitamin and protein-deficiencies be corrected and that proper attention be given to any co-existing disease. This together with the newer refinements in chemo- and anti-biotic therapy and details of post-operative care have reduced the operative mortality to an almost negligible level. Understanding the favorable nature of cancer of the colon and the relatively high cure rate as compared to cancer of other organs, surgeons have been willing to increase the scope of the operation done. Further, recognizing the high degree of palliation afforded patients with low incurable lesions with marked extension of comfortable normal life, the surgeon is no longer faced with the decision as whether or not to resect. The humane attitude now is to resect every lesion when it is technically possible, whether it be for cure or palliation. The death from liver or other distant metastases in the resected patient is relatively painless and many months and even years of useful and happy life may be salvaged. In contrast the death from large bowel obstruction, perforation and other events incident to the unresected lesion are not only painful and unpleasant but frequently prove to be psychologically disturbing to the entire family. The present high cure rate of over 50 per cent could be measurably increased if patients were resected before nodal metastases took place and the lesions were still limited to the colon. This can only be achieved by extending the program of lay education on the one hand, and more careful evaluation of symptoms of patients and establishment of earlier diagnoses on the part of the physician.

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THE TREATMENT OF MALIGNANT TUMORS IN THE FIRST TWO DECADES OF LIFE*

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Phoenix, Arizona

IN THE following discussion we shall be concerned with the curative treatment of malignant tumors in young people, not with palliation. By curative treatment is meant the selective destruction of the tumor both in its known locations and where, by statistical inference, it may have extended. Whether the result is achieved by surgical excision or by radiation therapy is not material to the present discussion. The choice is ordinarily a matter of expediency.

These general principles present special problems when they are applied in the individual whose growth is not yet complete. It is likely, for example, that the required therapy will produce serious irreversible damage to one or more growing tissues in a patient who, if cured, has a long life expectancy. Furthermore, tumors in the young differ from those in adults since only about two out of five are carcinoma, while about three out of five are embryonic growths. In some of the latter, the cytology is deceptive in that the intermixing of "tumor in a slow growth phase" with normal tissue may simulate invasiveness while apparent encapsulation may result from a rapidly growing tumor completely replacing normal cells. (1) We are presented, therefore, with the paradox of a tumor requiring therapy for cure, in a patient whose long life, if treatment is successful, may be greatly complicated by physiologic and/or psychologic deformity resulting from treatment.

The following cases, which have been under my observation during the past two years, are presented briefly to illustrate not results, since the follow-up in some is much too short, but therapeutic principles.

CASE NO. 1. NODAL LYMPHOSARCOMA.

P. N., a beautiful white girl of six years, was seen in May, 1950 by Dr. James Emert, Phoenix, because of a mass in the left groin which had been present for six weeks. Her mother brought her promptly for treatment because the father had died recently of teratoma. Dr. Emert performed an inguinal node dissection. The pathological report on the tissue was lymphosarcoma. At that time, no other adenopathy

could be demonstrated and the spleen was not enlarged.

Following surgery, she was investigated at the University of Pennsylvania Hospital from whence, in September, 1950, she was referred to me. By this time, a node about 1 cm. in size was palpable above the left supraclavicular fossa, and small nodes could be felt on the right side of the neck. Obviously, this was no longer a situation calling for radical therapy but, at the mother's insistence, the left cervical node was removed by Dr. Emert. The pathological appearance was the same as had been found in the groin.

The further course was rapidly downhill, with progressive involvement of additional lymph node areas, recurrence in the left groin and splenomegaly. While these responded to local palliative radiation therapy, there was general deterioration with a terminal blood picture suggesting aleucemic lymphadenosis. Exitus occurred in December, 1950.

COMMENT: Although lymphosarcoma is usually seen first as a generalized disease, an increasing number of cases have been reported in which the process seems limited to a single focus. The commonest site of localized disease is said to be around Waldeyer's ring, with the gastro-intestinal tract the second commonest. The writer has personally seen three cases of lymphosarcoma of the stomach remain apparently well for many years after subtotal gastrectomy. It is useless to say that these are not examples of lymphosarcoma since we have no way, a priori, of making the differentiation. Unicentral nodal disease is rare, but another personal experience involved a twenty year survival after removal of involved cervical nodes. Obviously in the present patient, surgical removal of the apparently limited disease was the proper procedure. There was little to lose and a remote chance of cure.

The possibility of post-operative radiotherapy to the area of excision might have been entertained, but there could be little doubt that it was not indicated. If tumor remained, surely the disease was multicentric and radical therapy

*Being part of a presentation made to the El Paso County Medical Society, Texas, in June, 1952.

was contraindicated. If there was no residual tumor, there was no justification for damaging the underlying femoral epiphysis. The precise lethal dose of radiation for lymphosarcoma is unknown, but it is probably at least of the order of 4000 given in three weeks. This dose would entail a serious morbidity for normal tissue.

CASE NO. 2. TRANSITIONAL CARCINOMA OF NASOPHARYNX. J. B., a white female of nineteen years, complained in February, 1950, of a draining right ear for six months and a swelling in front of this ear for two months. Headaches also had become prominent.

Examination under general anesthesia by Dr. W. J. Wick, Phoenix, revealed a large fungating friable mass originating in the right nasopharynx and extending across the midline to the left side. Biopsy revealed an anaplastic transitional cell carcinoma. Cervical nodes were enlarged on both sides.

COMMENT: There could be no question of surgical excision in this case. Indeed, the disease was so extensive that ordinarily only palliative radio-therapy would be undertaken. However, transitional cell carcinoma is often a highly radio-sensitive tumor and, in fact, in this patient the tumor was markedly reduced in size after the administration of approximately 1000 r. into the bulk of the tumor. It appeared clear there would be nothing to lose if therapy were carried to the limit of tolerance of the contiguous normal tissue, since there were no close vital structures, and the patient, at the age of nineteen years, had practically completed growth. Accordingly, she was treated vigorously on both sides of the neck and face as well as through an intra-oral field. It is estimated that the minimum dose in any part of the tumor was 3500 r. This treatment involved a mild blistering of the skin and epithelitis. The tumor disappeared.

The patient lived until late 1951. During the period of almost two years, there was no local recurrence. Solitary skin metastases occurred in the scalp eight and sixteen months after treatment. Metastases appeared in the lumbosacral spine at the latter period.

Radio-sensitivity is not synonymous with radio-curability. On the basis of the evidence, the conclusion that 3500 r. was a lethal dose for this tumor, would hardly be justified. Nevertheless, it seems within the bounds of possibility and affords the hope that a less extensive lesion might be controlled. Even in a younger

patient, therefore, vigorous radio-therapy to a transitional cell carcinoma which appears limited to regional nodes, is indicated.

CASE NO. 3. HEMANGIOPERICYTOMA OF THE LUMBAR SPINE. S. F. This white female, who is now twenty-one years old, was first seen in August, 1952, with the following history. She was explored two years before, at the age of nineteen, for a left retroperitoneal mass which was thought to be a calcified sarcoma, and was considered inoperable. However, in March, 1951, she was re-operated by Dr. John L. Pool of New York City, who removed a large tumor which proved to be a hemangiopericytoma at the level of the first and second lumbar vertebrae. The tumor was adherent to the transverse processes and vertebral bodies. The third lumbar transverse process had to be removed. She was given 4000 r. post-operatively. In February, 1952, she was re-explored because of a palpable mass which proved to be scar tissue. When I saw her in August, 1952, she was in good health. A left abdominal mass was palpable which could not be separated from the spine. Intravenous urography showed that the left ureter was displaced sharply laterally by the tumor mass and its position, therefore, provided an objective guide to the size of the mass. As far as could be judged, it was the same size as it had been and presumably was the scar tissue found by Dr. Pool. That patient has remained clinically well.

COMMENT: Hemangiopericytoma is classified by some as a benign vascular tumor, but local invasion and even metastases have been reported. (2) Apparent encapsulation may be deceiving, since anastomosing vascular channels are characteristic of the tumor. In the present case, there can be no question that the treatment of choice, namely surgical removal, was carried out. The need of post-operative radiotherapy, however, might be debated. Removal of the tumor obviously was a difficult task — it was regarded as inoperable on one exploration — and one might question whether complete removal was achieved. Furthermore, if radiation is decided upon, dosage is a difficult decision, since the histologic appearance is of little value in determining response to treatment. Many tumors of presumed blood vessel origin are retarded by relatively small doses, and if the present tumor is benign, retardation is all that is needed. On the other hand, some

tumors are quite resistant, and if malignant cells, or cells of rapid growth potential were left behind, cancericidal doses would probably be needed for their control. Depending on which attitude is adopted, one would be courageous — or negligent — not to advise post-operative therapy. Although the present tumor, if any remained, may have been retarded by 2000 r., I find myself in agreement with the therapist who elected to give 4000 r. The patient had practically passed her period of growth and tissue morbidity was relatively small. If the tumor were malignant, it is unlikely that a smaller dose would be effective. The major objection to the larger dose is over-treatment of a benign lesion, which, in my opinion, is the lesser of available evils. In any event, it is wiser to make a choice and proceed on a planned treatment than to adapt therapy to "the course of the disease."

CASE NO. 4. NEUROBLASTOMA. T. H. This white male, age six months, presented a left paravertebral tumor extending from the ninth dorsal down to about the second lumbar vertebrae. There was pressure atrophy of the ninth and tenth ribs. The left kidney was displaced caudad.

The patient was operated on February 27, 1953, and the tumor removed by Dr. D. State, then of Phoenix. The pathological report was neuroblastoma. The patient was given 3000 r. post-operatively.

COMMENT: The problem here was similar to that in Case No. 3 — a tumor which may have been removed completely, but, on the other hand, may not. There are two additional factors. First, the growing spine is in the treatment area. In one reported case, extreme retardation of epiphyseal growth followed the administration of 1200 r., to each side of the leg during five months. (3) Irradiation has been used to produce scoliosis in animals and to interfere with epiphyseal development on the convex side of a functional scoliosis in humans. (4) In general, it appears that infants tolerate smaller doses than older children.

In the second place, neuroblastoma is a serious malignancy which is usually fatal. No measure may be omitted which might result in sterilization of any remaining tumor. Obviously, then, it is most important to confirm the pathologic interpretation. Any reader of "Cancer Seminar" is impressed with the fact

that, on a given preparation, competent pathologists will differ in their interpretation. To cite an example at random, in the Seminar on Bone Tumors, (5) in Case No. 4 fifty-four pathologists thought the tissue was osteogenic sarcoma, thirty-six thought the lesion was benign, and six made a diagnosis of chondrosarcoma.

My compromise solution in the present case was to give 3000 r. through one portal during three weeks. The parents were made fully aware of the morbidity and implications. In this type of complicated problem there would probably be as many solutions as there are centers of oncology.

CASE NO. 55. CANCER OF THYROID. P. P. I first saw this delightful girl of nine years, in April, 1952, a patient of Dr. F. Holmes. She had been studied in Oakland, California in January, 1951, where a total thyroidectomy and block dissection of the neck was done for carcinoma. Lymph nodes on both sides of the neck were found to be involved. There had been consideration of the use of roentgen therapy, but surgery was chosen. The use of radioactive I 131 was considered to be more academic than practical, as is so often the case.

In April, 1952, she was re-examined in Oakland and found to have a nodule under the right ear. Clinically, confirmed by tracer studies, this was thought to be metastatic. The choice of surgery versus radiation had to be made. Because of the extensive original disease, radiation was elected. The nodule was given 3000 r. This would not be considered a cancericidal dose, which would probably be of the order of 5500-6000 r. The patient's mother felt that the tissue reaction would not be tolerated, and I was inclined to agree. With 3000 r., the mass diminished to about one-third of its size and no new masses appeared. After considerable consultation, Dr. T. W. Woodman of Phoenix re-operated. There has been no recurrence to date, and the child seems to be in good health.

COMMENT: This case has many interesting facets but particularly, I think, illustrates the principle that the biologic potential of a tumor cannot always be judged from its histologic appearance. There was little in the original lesion to suggest that rapid deterioration would not follow, except that the pathologist commented that the nodes did not look as mal-

ignant as did the thyroid tumor. Recurrence after one year was not unexpected, therefore, and yet at the same time, it suggested that the tumor was slow-growing. Therefore, the recurrence deserved adequate therapy, but of what type? I think the compromise accepted here was a good one. The radiotherapy used, I believe, partially sterilized the tumor and certainly reduced its size. In my opinion, a dose of 3000 r., when it can be administered to a limited area, does not increase operative morbidity. If the tumor responds and the lesion becomes operable, so much the better. If not, the dose is sufficient to be regarded as good palliative therapy.

SUMMARY: Six patients less than twenty years of age who suffered from malignant tumors, are presented and discussed from the point of view of therapy. The theme is that where there is any chance of success, therapy should be planned to cure. Whether surgery or radiation or both are used, is a matter of expediency. The complications peculiar to treatment in childhood are discussed and the morbidity evaluated.

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TRACHEOTOMY IN BULBAR POLIOMYELITIS

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DEATH in acute anterior poliomyelitis results solely from bulbar and bulbo-spinal involvement. Among other effects, involvement of this region causes respiratory embarrassment and failure, due to paralysis of the muscles concerned in swallowing, breathing, and coughing. Inability to swallow results in pooling of salivary secretions which can block the larynx and be aspirated; loss of the ability to cough can lead to atelectasis and "drowning in one's own secretions."

These contingencies were dealt with by postural drainage, as suggested by Durand in 1929, continuous mechanical aspiration of pharyngeal secretions, parenteral instead of oral or gavage feeding, administration of oxygen by catheter or mask, occasional bronchoscopic aspiration when indicated, and, when there was sufficient paralysis of the diaphragm and the intercostal muscles to warrant it, the use of the respirator. When death occurred in spite of these measures, it was usually ascribed to progressive involvement of the respiratory and circulatory centers of the brain stem. To this eventuality the physician had become reconciled, since he felt powerless to prevent or control the spread of this infection.

The use of tracheotomy in the treatment of bulbar poliomyelitis was first reported by Wilson from Boston, in 1932. Other reports describing and advising the occasional emergency

use of tracheotomy in selected cases of acute bulbar poliomyelitis appeared sporadically during the next 15 years.

In 1946, compelled to cope with a severe epidemic of poliomyelitis, including 400 bulbar cases, the Minneapolis group performed 75 tracheotomies. The reports of their experiences in these cases and their advocacy of early operation gave great impetus to the use of tracheotomy in bulbar poliomyelitis. This was reflected in a succession of articles describing an increasing use of tracheotomy, not only as a life-saving measure in respiratory emergencies, but also as a prophylactic procedure to prevent hypoxia, hypercapnea, atelectasis and pneumonia, and pulmonary edema. This advocacy of the use of tracheotomy based on greatly liberalized indications, including so-called "prophylactic" tracheotomies, has met with strong disapproval from a number of workers. Curiously, this seems to have developed into a sort of sectional issue (except for occasional dissenters within both regions). In the Midwest and West they favor more frequent and earlier tracheotomy, which is considered to be life-saving; on the other hand, in the East, where tracheotomy was first performed, most are wary about these liberalized indications and sudden "enthusiasm" for this operation, maintaining that the great majority of bulbar patients can be saved by expert management, without tracheotomy.

It will be the aim of this paper to review the

Read before the Arizona Medical Society, Tucson, May, 1953.
Appeared in extended form Am. Jour. Med. Services, Oct. 1952.

facts relating to both sides of this controversy and attempt to deduce areas of reconciliation which may be useful in the care of these desperately sick patients. A general discussion of the technique of tracheotomy and the post-operative care, as modified by the use of the respirator and the unique conditions that obtain in poliomyelitis, will be outlined.

Clinical Pathology, Biochemical Changes and Pathological Physiology. Acute bulbar poliomyelitis presents disastrous derangements of at least 4 functions, namely: 1) swallowing, 2) breathing and coughing, 3) circulation, and 4) cerebral; one or more of these can occur in the same patient.

A principal problem in this disease is the prevention or correction of hypoxia and hypercapnea.

To aid in understanding the symptoms of this affection, bulbar polio cases can be grouped anatomically as follows: 1) Cranial Nerve Nuclei Group, with impairment of the swallowing mechanism and laryngeal function; 2) Respiratory Center Group; 3) Circulatory Center Group; 4) Bulbo-Encephalic Group, and 5) Bulbo-Spinal Group, with paresis of the respiratory muscles.

A discussion of these symptoms, biochemical changes and anatomical groups would be of much value, but the lack of time unfortunately will not permit it.

Indications for "Early" Tracheotomy. Those workers who advocate the performance of early tracheotomy maintain that tracheotomy has too often been looked upon as a measure of last resort and effects have been attributed to it which were due to the serious condition for which it was done, or to the fact that intervention came too late. They assert that to prevent anoxia is better than having to correct it after permitting it to happen, since damaged nervous tissue is particularly susceptible to oxygen lack and this damage is usually irreversible. If tracheotomy can avoid even one period of severe anoxia in these cases, it would be worth while, since the margin between life and death in these patients is so narrow that one such episode may kill them. This group of workers feel that early elective tracheotomy performed before respiratory obstruction and anoxia can occur is the ideal treatment and in selected cases it is a life-saving measure. They admit that a number of these tracheotomies may be needless,

but argue that the danger of waiting is much greater than that of operating.

In these cases the importance of tracheotomy is that it accomplishes a by-pass allowing air to enter the trachea without being sucked through the pharynx, thus preventing secretion from being drawn into the lower airway. Other advantages of tracheotomy are easy removal of mucus and secretion from the respiratory tract, ability to bronchoscope the patient through the tracheotomy opening without requiring his cooperation for the emergency removal of mucous plugs, either when in or out of the respirator, easier maintenance of adequate oxygen tension, and in facilitating the treatment of pulmonary edema by applying positive pressure.

These workers advise tracheotomy:

1 When, in spite of proper postural drainage and continuous pharyngeal aspiration, it is impossible to prevent pooling of secretions in the pharynx, resulting in spill-over into the airway, respiratory distress and recurrent cyanosis; in short, when there is progressive hypoxia accompanied by the presence of secretions in the pharynx.

2) With stupor or irrationality sufficient to make the patient oblivious to the accumulation of secretions in his airway, particularly if he is in a respirator.

3) If there is fluid accumulation and the patient later requires a respirator.

4) In the presence of excitement and unmanageability, causing the patient to resist pharyngeal aspiration strenuously.

5) If there is unconsciousness or pronounced restlessness in a patient who does not respond to other treatment in a few minutes.

6) If there is pronounced restlessness (which often means air hunger) or stupor in a patient in a respirator, even if the paralysis is apparently only of the spinal type.

7) When there is clinical or Roentgen-ray evidence of atelectasis, pneumonia, or pulmonary edema due to secretion in the lower airway.

8) In the presence of rapidly progressive bulbar symptoms.

9) In the presence of grave signs of vasomotor or respiratory center failure.

10) When there is inability to cough effectively, especially if the patient is in a respirator.

11) When there is a bilateral paralysis or spasm of the vocal cords.

12) On the appearance of the "angle or rope dent" sign of Sjoberg.

13) If the attendants are untrained or inefficient and the equipment is inadequate.

Galloway feels that lack of cooperation is more often a sign of anoxia than a matter of temperament. In doubtful cases he maintains that it is safer to perform a tracheotomy than to wait and, therefore, the operation should be performed more often, not less often, when the attending team has had little experience with the disease.

Arguments Against Early, Prophylactic Tracheotomy. In general, workers in the East maintain that tracheotomy is seldom necessary if the patient is given expert management and care.

Wilson stated that tracheotomy is a radical step, often life-saving and often dramatically effective. However, he felt that it is necessary only in a small fraction of the cases of bulbar poliomyelitis. Several other workers (Stimson, Shaw, Pierce and Anderson, Boines, Elkins, Howne, Wesselhoeft, and others) have seldom seen any indication for tracheotomy.

Boines states that the only true physiological indication for tracheotomy is paralysis of the larynx and vocal cords. The accumulation of oral secretions in the pharynx is not an indication, because this condition can be managed successfully with experienced medical and nursing personnel.

Stimson states that the following conditions which have been cited as indications for tracheotomy are insufficient indications. 1) Inability to cough. 2) Inability to swallow. 3) Any laryngeal involvement besides bilateral abductor paralysis. 4) Pulmonary edema. This requires positive pressure artificial respiration, but besides through a tracheotomy tube, this can be given by mask, or by hood on a respirator. 5) Atelectasis. This, he believes, requires immediate suction which can be better done visually by means of bronchoscopy, than by blind suction through a tracheotomy tube.

In general the disadvantages of tracheotomy are cited as follows:

1) The bulbar poliomyelitis patient is already weak when the ordeal of tracheotomy is added; the patient needs rest and a minimum of handling; the loss of the power of speech adds to the apprehensiveness.

2) Special equipment and nursing care are needed for the administration of humidified

air, oxygen and for aspirating.

3) Children must be kept well restrained to prevent them from pulling out the tube.

4) Tracheotomy delays the return of swallowing by 2 weeks or longer.

5) The tracheotomy tube narrows the airway and acts as a foreign body to increase tracheal secretions. There is frequent crust formation which causes obstruction.

6) Constant experienced nursing care around the clock is necessary in order to avoid sudden suffocation due to obstruction of the tube, since the patient cannot call for help. Suction of the pharynx must still be continued to prevent saliva from entering the airway.

7) The constant suctioning of the trachea by the catheter causes inflammation, trauma and secondary infection. Repeated bronchoscopy may be necessary through the tracheotomy opening due to crust formation.

8) Complications of tracheotomy may be pneumothorax and mediastinal emphysema; in respirator cases there may be prolonged post-operative bleeding from the wound.

9) Delayed healing of the tracheotomy wound and stenosis of the trachea can occur.

10) There is always a certain amount of surgical risk.

Areas of Reconciliation. The preponderance of opinions in American and foreign literature favors the performance of early, elective tracheotomy as a life-saving measure. However, one should not be swayed by mere numbers, because it is only natural that workers performing tracheotomy (or any other procedure that is relatively new) will be inclined to write about it, whereas those who are relying upon older less dramatic methods will be less apt to "break into print" for the sake of denying the need for tracheotomy. When we compare the statistics from Los Angeles, where one out of every 2 bulbar polio patients was tracheotomized, with the reports from Eastern hospitals (see Stimson) where only one in 20 was tracheotomized, a ratio of about 10 to 1, we realize what a wide gulf separates the two schools of thought. Heartwarming reports of dramatic and even miraculous recoveries following emergency tracheotomy in individual cases tend to pale when mass figures of comparative mortality rates from different sections of the country are placed under the cold light of statistical analysis. On the other hand, individual workers

attest both by their clinical experience and a comparison of their own mortality rates, before and after the use of tracheotomy, the unquestionable value of early operation. However, the undisputed wisdom of performing tracheotomy in certain selected cases does not necessarily apply to the many others that have been performed "prophylactically".

All agree that hypoxia and hypercapnea are constant threats which must be combatted by all possible means and in selected cases tracheotomy is unquestionably a very effective means. The crux of the problem is to decide which patient will probably live without tracheotomy and which will probably die unless a tracheotomy is done. All the indications previously outlined require experienced evaluation in each individual case, and these patients have to be under constant observation by carefully trained personnel, so that crucial decisions can be made at the proper time. For example, a patient with an apparently mild paralysis may develop severe respiratory difficulty in a very short time, while a patient with bulbar signs that appear to be progressing rapidly may recover almost completely over night.

There is no question that a tracheotomy should be performed in those cases where there is a clear indication of respiratory obstruction which can not be rectified by any other means at the command of the attending physicians. Also, in those cases where a patient seems desperately ill and tracheotomy seems a very dangerous procedure, experience has shown that the patient should be given the benefit of the doubt and the operation performed, in spite of the understandable reluctance on the part of the surgeon. The charge by some workers that the operation is mutilating seems trivial; of what moment are esthetic considerations in a matter of life and death? Furthermore, if a tracheotomy is properly performed and the post-operative care is excellent, I have never felt that the operation per se is particularly harmful. In these cases, if some avoidable tracheotomies are performed, I feel certain that they will not alter the vital statistics. Therefore, in those institutions where expert care is constantly available, the performance of a tracheotomy will not enhance the danger, but on the other hand, may prevent the occurrence of sudden anoxia in a small number of cases.

It has been stated that tracheotomy is more

necessary when the attending team has had meager experience with the disease; that if all personnel were thoroughly trained and the mechanical arrangements perfect, tracheotomy might seldom be required, but that unforeseen failures occur too easily. As an example, Galloway cites an instance where an assistant substituted a fine medicine dropper for a proper glass connecting tube and thus prevented proper aspiration for 2 half-hour periods resulting in anoxia and a decerebrate state. However, this does not strike me as a valid reason for early, prophylactic operation, because poor post-tracheotomy care can lead to respiratory obstruction with the same dire results. It is difficult for me to see, in the light of my past experience with the general caliber of post-tracheotomy care, why there would be any likelihood of improved care of a tracheotomized bulbar patient by the same type of untrained and incompetent personnel as existed prior to the tracheotomy. Certainly the lack of training and unfamiliarity would not cease abruptly merely with the performance of a miraculous tracheotomy; as a matter of fact tracheotomy might even complicate the treatment in such a situation. Where neither the equipment nor the personnel is adequate, then it would seem to me that the early, elective, so-called "prophylactic" tracheotomy could very well be deferred until there is a clear indication for operation. Actually these cases require expert care and excellent equipment; otherwise, no matter what is done, the results will be poor.

All efforts should be made to get the patient to relax and cooperate; confidence must be instilled in them and any appearance of anxiety and excitement must be avoided. Certainly in a patient who is emotionally unstable and will not cooperate, the wiser thing would be to perform an earlier tracheotomy.

There are times when it may be extremely difficult to tell whether a patient's respiratory trouble is due to central disturbance of the respiratory center or to pharyngeal secretions. In that case a bronchoscopy could be done for verification or even a tracheotomy would be justified even though it might prove to be ineffective.

Wilson feels that tracheotomy is a radical step but is often life-saving. All will agree with him when he says, "If the pharynx cannot be kept clear enough so that the patient can get

the needed rest, a tracheotomy should be done . . . In a patient with pharyngeal paralysis whose every breath must be calculated and planned and a continual alert must be maintained in order to expel accidentally aspirated secretion, fatigue gradually develops. This must certainly be prevented."

It is surely a difficult matter to decide at which point in the course of the disease a tracheotomy should be done, if it is to prove life-saving, because there is usually no single sharply defined indication, except abductor paralysis of the vocal cords, which requires immediate tracheotomy. However, when proper postural drainage and aspiration (both pharyngeal and bronchial) are ineffective in allowing the patient to rest and sleep, a tracheotomy is necessary and one ought not to wait for severe choking attacks with cyanosis to prove its necessity.

Finally the criteria for the performance of a tracheotomy cannot be hard and fast; each case is a law unto itself. The decision will depend on the physician's experience in the management of these cases. The adequacy of the facilities at his disposal, including the quality of nursing care, must be important factors in this decision.

In general, the laryngologist plays a minor part in the polio team, but in this group of cases he must be prepared to share a large part of the responsibility. Therefore, he should be asked to see these patients early, so he can observe them in the light of his specialized experience and determine the type and progress of obstructive factors. This would help him determine the most propitious time to intervene, before serious damage can occur from anoxia. In small communities where there is not enough polio to give each man adequate training and experience in the handling of these cases, a polio team should be set up, and the direction of the severe cases transferred to this team. Certainly at least 2 laryngologists should be part of the team, in order that one could be on constant call.

Technique of Tracheotomy. The performance of a routine tracheotomy will not be discussed here. (For a description of the minute details concerning this operation the interested reader is referred to the writer's book, "Acute Laryngotracheobronchitis," published by Grune and Stratton, 1949.) Special considerations required

because of the unique conditions that obtain in poliomyelitis, particularly when the respirator has to be used, are outlined below:

If time permits and the patient can understand, it would be wise to explain that he will be unable to talk after the operation, but will again be able to speak at a later date.

1) Tracheotomy may be performed either under local anesthesia or by means of endotracheal anesthesia, whichever is deemed more suitable. In children particularly, a general anesthetic is recommended, some preferring the use of avertin. If necessary, curare may be given to relax the neck muscles and make the head freely movable.

2) Use of the bronchoscope. If there is little or no respiratory obstruction or if a patient's lack of cooperation precludes its use, the bronchoscope may be dispensed with. In all other cases, it is wiser to insert a bronchoscope (or endotracheal tube), both to assure free breathing during the operation and to act as a guide upon which to cut down. This will help prevent the development of pneumothorax and mediastinal emphysema. In the event that there is paralysis of the vocal cords or severe laryngeal spasm, an endotracheal tube is essential, a mask obviously being ineffective.

3) A so-called high tracheotomy, through the second tracheal ring, should be performed, so that if a respirator is later required the tracheotomy tube will remain on the outside.

4) Be prepared to cope with bleeding from the isthmus of the thyroid gland which may have to be cut.

5) Always use the largest tube that can be inserted comfortably, being careful that there is no excessive pressure, which could cause necrosis of the cartilage. In children, be sure that the tracheotomy tube does not rest on the bifurcation of the trachea. Some have advised cutting off the end of the tube in such a situation; my practice has been to add 2 or more gauze pads placed under the flange of the tracheotomy tube. This will keep the tube from extending too far down the trachea.

6) If the patient is to be placed in a respirator immediately following tracheotomy, respirations can be maintained by the use of a tight-fitting anesthesia mask, with oxygen insufflated by manual pressure of the bag. If a Bennett flow-sensitive positive pressure machine is available, this can be used during the oper-

ation. In this way the tracheotomy is done under a closed system of anesthesia, preferably over a bronchoscope.

7) If the patient is already in a respirator and cannot breathe well enough to permit carrying out a tracheotomy with the respirator opened up, the following techniques may be employed:

a) Using positive pressure mask (Bennet or other type) the patient can be pulled far down into the opened respirator, but with the head still outside. With this technique the neck must be pulled up through the collar after the operation and the respirator closed and turned on as soon as the trachea is opened. A finger should be placed over the tracheotomy tube opening and the positive pressure oxygen continued until all is ready and the respirator is working again.

b) The patient's body, including the head, may be pulled down inside the opened respirator and the anesthetic or oxygen can be applied through the collar opening of the respirator. As soon as the trachea is opened the oxygen tube is attached directly to the tracheotomy tube and the patient's head and neck drawn through the collar opening. This latter method has been deemed more suitable.

A number of devices to hold the rubber collar away from the tracheotomy tube have been suggested, but time will not permit a description of these.

The writer has used a ribbon abdominal retractor placed horizontally between the steel collar and the respirator. It was molded so that it pushed the rubber collar toward the respirator, holding it away from the tracheotomy tube. This was used in an emergency and proved both simple and satisfactory.

Post-Operative Care. 1) **Aspiration.** Secretions should be removed at intervals of 15 to 30 minutes, as best suited in the particular case. The catheter should have smooth rounded ends and only one or 2 side openings. Nurses must be taught to use extreme caution and gentleness. In order to avoid trauma to the tracheal mucosa the rubber tube should be pinched off during its insertion, which is timed with inspiration. When necessary, the rubber tube should be inserted down to the bronchi in order to remove inspissated plugs. The catheters can be sterilized in a solution of Zephiran, 1:3000.

2) **Postural Drainage.** The foot of the bed or

respirator should be raised at an angle of 25° to facilitate drainage by gravity. However this should be done only for a period of 5 to 10 minutes out of every hour, because longer periods cause a marked fall in the tidal air, as demonstrated by Bower and his associates. It is a good idea to instill a half dropper-full of a solution of sterile 3% sodium bicarbonate, normal saline solution or penicillin (5000 units per cc.) before raising the foot of the bed, and then aspirating while the head is lowered. The patient should also be encouraged to cough at this time and helped by placing the finger over the tracheotomy opening during expiration. If the patient is unable to cough, he can be helped by applying manual pressure to the thorax.

3) **Humidification.** The patient should be in a warm, moisture-laden atmosphere, with the temperature about 70° to 75° F. and the relative humidity 80 to 90%. If the patient is given oxygen, carbon dioxide and moisture should be added.

4) **Feeding.** An adult should receive from 2500 to 3000 cc. of fluids, roughly in the proportion of one-third isotonic sodium chloride or Ringer's solution and two-thirds of 5% dextrose in water. It is important to see that the patient does not become dehydrated so that the secretions get too viscid. Over-hydration can result in cerebral or pulmonary edema. After the first few days a protein hydrolysate and vitamins (500 mg. B complex and 500 mg. ascorbic acid) may be given intravenously. Gavage feeding can be started after the patient begins to swallow.

5) **Ventilation.** A newly devised respiratory ventilation meter (Bennett) has been helpful in determining whether the patient in the respirator is obtaining adequate ventilation. By setting the negative respirator pressure and positive oxygen pressure at various strengths and checking the meter, optimum pressures can be arrived at. The rates and pressures must be checked carefully and regularly several times a day. It has been found that in tracheotomized respirator cases receiving added positive pressure breathing, there is less variation in the pH of the blood and a significant decrease in the frequency of pulmonary acidosis.

6) **Antibiotics.** Penicillin should be given routinely in these cases to combat and prevent infection. Terramycin can be given intravenously. Penicillin may also be given as an aero-

sol.

7) **Roentgenograms of the Chest.** These should be taken routinely after the tracheotomy and whenever warranted thereafter.

8) **Removal of Tracheotomy Tube.** The tracheotomy tube should not be removed until quite some time after the patient is out of the respirator, because many patients get repeated episodes of atelectasis, due to their inability to cough effectively. It would be wiser to leave the tube in too long rather than too short a time. The tube should first be plugged for 2 days to a week before removing it entirely.

9) **Nursing Care.** These patients present a very difficult nursing problem. Therefore, only highly competent nurses, well trained in the care of tracheotomized patients, should be assigned to these cases. An inexperienced nurse may fail to prevent or correct an episode of cyanosis which may lead to a fatal outcome. It devolves upon the attending physician to instruct each nurse in the care of each individual

patient pointing out the problems, the dangers, and the treatment in the most detailed manner.

10) **Positive Pressure Oxygen Apparatus.** Use of positive pressure oxygen apparatus is advised. Several devices have been described, but the Bennett flow-sensitive intermittent positive pressure breathing unit appears to be the most valuable. It is a mobile pressure breathing and resuscitation apparatus which has been of great value in the emergency management of polio patients with respiratory paralysis and in those requiring anesthesia.

Summary. A general review of the problem of respiratory obstruction in bulbar poliomyelitis together with the pros and contras of early tracheotomy in these cases has been presented. An attempt was made to find middle ground which could serve as a basis for treating these desperately ill patients. Special points in the performance of tracheotomy and the after-care as related to the unique conditions that obtain in bulbar poliomyelitis have been outlined.

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

CLINIC CLUB CASE NO. 30

A FORTY-nine-year-old man entered the hospital because of difficulty in urination.

For two months he had frequency (ten times during the day and five times at night). This was associated with weakness and hesitancy of the stream. There was no dysuria, gross hematuria, back pain, feverishness or vomiting. One week before entry he had an attack of dyspnea, wheezing and cough, and he developed conjunctival and palpebral hemorrhages. The blood pressure was 120 systolic, 80 diastolic. The legs became edematous.

Physical examination revealed a pale drowsy man. The face was puffy, and there were conjunctival and palpebral hemorrhages. The eye grounds revealed flame-shaped hemorrhages, narrow arteries and blurring of the disk mar-

gins. The neck veins were distended and pulsating. There was an apical systolic murmur. In the abdomen there was a fluid-filled, tense, nontender mass extending upward from the pelvis to the level of the umbilicus. Rectal examination revealed tender external hemorrhoids and a questionably enlarged prostate. The legs and feet were edematous.

The temperature was 99° F., the pulse 88, and the respirations 16; the blood pressure was 175 systolic, 90 diastolic.

Examination of the blood disclosed a hemoglobin of 5 gm. and a white-cell count of 7300. The nonprotein nitrogen was 200 mg., the calcium 6.8 mg. and the phosphorus 8.2 mg. per 100 cc.; the alkaline phosphatase was 3.0 units, and the carbon dioxide was 10.6 milliequiv. per liter. The prothrombin time was 18 seconds (control, 17 seconds). Repeated examinations of the urine gave a reaction of pH 6.0 to 7.0, with a specific gravity of 1.008 to 1.014, and a one plus to four plus test for albumin. The sediment showed many red cells and one one occasion 20 to 30 white cells per highpower field. Cultures grew colonies of *Staphylococcus aureus* and colon bacilli.

An electrocardiogram showed digitalis effect only. An x-ray film of the chest revealed basal congestion of the lungs and some left ventricular hypertrophy. A plain film of the abdomen was normal.

The patient was catheterized in the Emergency Ward, and 750 cc. of clear urine was removed. A few hours later, after several unsuccessful attempts to pass a No. 18 catheter, a No. 20 Foley catheter was passed without difficulty, and 1000 cc. of clear urine removed. There was a good deal of subsequent bleeding into the bladder, and clots were removed by irrigations as required. He was digitalized and given resuspended red cells in 10 per cent dextrose in water. Fluids were forced to 4000 cc. a day. The palpebral hemorrhage and edema gradually subsided. After a few days the indwelling catheter became very painful. He began to vomit, and fluids were then pushed intravenously and by proctoclysis. The uremia and acidosis increased. Repeated nonprotein nitrogen estimations were 175, 250, 210, and 280 mg. per 100 cc. with corresponding carbon dioxide estimations of 10.6, 14.7, 13.4 and 17.5 milliequiv. per liter. He died on the tenth hospital day.

DR. C. B. WARRENBURG

In this case we are considering today, there is undoubtedly much information regarding this patient that does not appear in our protocol. The reason is, of course, that the diagnosis would probably be given away by such findings or history. The patient obviously is suffering from advanced renal insufficiency, even to the state of uremia as exemplified by the findings on the physical examination and laboratory work. In addition, the patient has a congestive heart failure clearly expressed by distended and pulsating neck veins, edema, along with the dyspnea, wheezing, cough, and x-ray findings of the chest. The diagnostic problem then, is to find the cause of marked cardio-renal insufficiency in a 49 year old man with a medical history that dates back only 2 months and whose chief complaint is difficulty in urination. Now, I feel sure that this man's medical history has more information in it than that, and if that the information were known, we could probably proceed in a more orderly manner toward the proper diagnosis.

The patient may very well have an acute or chronic glomerulonephritis. At times it is im-

possible to make a differential diagnosis between these two. However, his age is very much in favor of an exacerbation of a chronic glomerulonephritis. The tortuous arteries, the changes in the eye grounds, the severe anemia, the fixation of the specific gravity of the urine, and the lack of concentration, definitely point to a chronic process. The differentiation of a nephrotic phase of chronic glomerulonephritis and true nephrosis is also difficult. The elevation in blood pressure in our patient is not marked, yet the eye ground changes are present. The moderate hypertension speaks against chronic glomerulonephritis. In all patients presenting a picture of advanced renal insufficiency, the possibility of renal disease other than nephritis must be borne in mind. Bilateral pyelonephritis with or without stones, bilateral renal tuberculosis, hydronephrosis due to ureteral or prostatic obstruction, and advanced polycystic disease of the kidney may all terminate in uremia as our case today does. Hence, as stated earlier, when confronted with advanced renal disease in which real etiology is not certain, it is often impossible to characterize the renal lesion without knowledge of the natural history of the disease and the application of appropriate urologic techniques.

Hydronephrosis by definition is dilatation of the pelvis and calices of the kidneys with pressure atrophy of its substance, all of which is the result of obstruction. Obstruction of the urinary tract causes the greatest degree of hydronephrosis when it is partial, gradual, or intermittent. When the obstruction is sudden and complete, no urine is secreted, increase in intrapelvic pressure is less marked, and renal atrophy maybe primary or follow hydronephrosis. The obstruction maybe anywhere along the urinary tract. When it is below the bladder as in prostatism or urethral stricture, the lesion is bilateral, infection is predominant, and the degree of hydronephrosis is less marked.

It is my feeling that in this case today, we are dealing with an infected hydronephrosis or pyelonephritis due to obstruction below the bladder, that this is a chronic process and had led to the condition that we find this patient in, namely, congestive heart failure and uremia. The cause of obstruction may be outside the urinary tract, as neoplasms, adhesions, operative trauma, aberrant blood vessels, or pressure from a pregnant uterus. The common causes of ac-

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22 Published Reports Covering Treatment of 1443 Peptic Ulcer Patients with Banthine

Comprising the reports published in the literature to date which give specific facts and figures of the results of treatment

AUTHORS	No. of Patients	Chronic, Resistant to Other Therapy	TYPES OF ULCERS				RELIEF OF SYMPTOMS (Chiefly Pain)				Surgery or Complications ¹	Side Effects Requiring Discontinuance of Drug ²	EVIDENCE OF HEALING			
			Duodenal	Jejunal	Stomal	Gastric	Good	Fair	Poor	No Report			Complete	Moderate	None	No Report
Grimes, Lyons, Reeves	100	100	93	7			80	11	4		5		47		19	29
Friedman	15	15	14			1	5		4	0 ³			2			13
Beckgaard, Nielsen, Bang, Graeflund, Tolboesen	26	26	21			5	16	4	6				8	6	12	
McFarland, Brown, Edwards, Marek, Ward	162		162				136	12	11		3	1	14	9	7	129
Segal, Friedman, Watson	34	34	34 ⁴				14	13			7	2	5		8	14
Brown, Collins	117	99	117				97	7	8		5	8	55	9	8	40
Asher	77		65		7	5	52	9	16			16		9	21	47
Beckgaard de la Vega, Reyes Diaz	5	4	5				4		1					3	2	
Wickstele	116	116	102	8		6	102		14				53		18	45
Hall, Morrison, Weeks	18	18	18				11		1	0 ³			18			
Maier, Walli	38	38	24			14 ⁴	27	7	4 ³				10	2	5	21
Meyer, Jarman	25	18	25				21		4							25
Poth, Fromm	37	37	37				33	3	1				33	3	1	
Plummer, Burke, Williams	41	41	41				36		5				38		3	
McDonough, O'Neil	104	100	104				63	10	21			11	4		11	89
Broders	60	60	58	1	1		35	19	6				10	1	40 ⁴	
Lagersten, Tester, Ruffin	11		11				11									11
Holtebek, Holtebek, Langford	76	69	76				35	27	10		4	10	26		10	36
Ogden	42		39	2		1	42 ⁴									42
Shalhen	48	48	48				33	10	3		2		33	10	3	
Johnston	145	145	145				143		2			2	143		2	
Rossett, Knox, Stephenson	140		141			5	140					41 ⁴	53			92
TOTALS	1443	960	1380	17	8	38	1142	132	131	12	36	54	352	52	179	634
PERCENTAGES		67.8	95.6	1.2	0.6	2.6	81.2	9.4	9.3		2.7	78.5	6.6	22.9		

1. Not included in tabulations.

2. Included in "Relief of Symptoms" as "Fair" and in "Evidence of Healing" as "None."

3. Four had no symptoms when Banthine therapy was begun.

4. Of which seven were penetrative lesions and five partially obstructive.

5. No symptoms were present in four.

6. Two with symptoms only; no demonstrable ulcer.

7. Three were psychopathic patients and one had a ventricular ulcer of the lesser curvature.

8. Unfavorable findings after treatment period of two weeks; forty-seven had duodenal deformity.

9. All returned to work within a week.

10. In these four, after relief of symptoms, Banthine was discontinued because of urinary retention.

During the past three years, more than 250 references to Banthine therapy in peptic ulcer and other parasymphathotonic conditions have appeared in medical literature. Of these reports, 22 have presented specific facts and figures on the results of treatment in a total of 1,443 peptic ulcer patients, 67.8 per cent of whom were reported as chronic or resistant to other therapy. These results are tabulated above and show:

"Good" relief of symptoms was obtained in 81.3 per cent of the 1,405 patients on whom reports were available.

"Complete" evidence of healing was obtained in 70.5 per cent of the 783 patients on whom reports were available.

In all but 9.3 per cent, relief of pain was "good" or "fair." In all but 22.9 per cent, evidence of healing was "complete" or "moderate."

During treatment, 26 patients required surgery or developed complications other than ulcer which required discontinuance of the drug before results could be evaluated.

Of the remaining 1,417 patients, only 3.7 per cent experienced side effects sufficiently annoying to require discontinuance of the drug.



*Volume containing complete references, with abstracts of 39 additional reports, will be furnished on request by

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quired obstruction within the urinary tract, are stones, stricture, spasm, foreign body and tumor. In view of the fact that this man's prostate is questionably enlarged, it is our contention that there is a median bar enlargement or a bladder neck constriction from some cause or other. Associated with this, it is believed that the patient has diverticula of the bladder which accounts for the 750 cc. of urine that was removed by catheter and only a few hours later, another 100 cc. was removed by second catheterization. This was probably the emptying of a saculation of the bladder wall into the bladder after the first catheterization was carried out. There are no symptoms or findings of kidney pain or kidney enlargement in this case which are against the diagnosis of hydronephrosis, but as mentioned earlier, when obstruction is below the bladder, the degree of hydronephrosis is found to be less marked.

The chain of events then that probably occurred to present this terminal picture is chronic bladder neck constriction or median bar obstruction with a slowly developing hydronephrosis and hence, gradual and increasing damage to the kidney substance; the associated diverticulae of the bladder that is so common in urinary obstruction below the bladder neck or at the bladder neck; and the terminal congestive heart failure and uremia.

My second diagnosis would be chronic glomerulonephritis with a terminal heart failure and uremia and a rather recent bladder neck constriction or obstruction from some cause undetermined.

DR. B. P. FRISSELL

I am able to make one, and only one, positive statement concerning this case and that is that our patient most certainly died from the end results of extreme renal failure or uremia. Practically all of the classical signs and symptoms of the so-called "end-stage kidney" are given in the protocol. The severe anemia, the retinal changes, the conjunctival hemorrhages, the edema, the left-sided heart failure, the acidosis, the low specific gravity of the urine, and the blood chemistry changes, including the elevated NPN, would all appear to clearly indicate longstanding, advanced renal disease.

There are, however, a few disconcerting facts with which we have to reckon. I am well aware of the futility, as well as the impropriety, of mentioning the inadequacies of the history at

this point but I have read this protocol through numerous times in an attempt to find some little reference to the patient's past history without success. I certainly find it difficult to start this man's illness two months before admission and less than two and one-half months before his death. Likewise, the blood pressure readings are not what we would expect to find in terminal renal disease. However, we must conclude from the eye ground changes that hypertension had existed at some period of time during this man's illness for our present conception of so-called albuminuric retinitis is that it is not the direct result of uremia per se but that it occurs as a result of hypertension.

The urinary findings do not include casts of any type. One wonders how much the albumin content of the urine was reflected in the findings of red cells and likewise how much of the red cell content of the urine was due to trauma from catheterization which was admittedly enough to require irrigation of the catheter to remove clots from time to time. The finding of pus cells in one occasion suggests infection. Whether this was of primary importance, or secondary to catheterization, is unknown. The most disconcerting information in the protocol is the obvious bladder retention on admission to the hospital with a total of 1750 cc. of what is described as clear urine within a period of a few hours after admission to the hospital.

I find the literature more consoling than helpful in solving our problem. Harrison has this to say for instance, "Sometimes the decision as to the exact etiology of the uremic syndrome may be difficult even at the autopsy table." From a practical standpoint, however, the problem would appear to be that of deciding whether we are dealing with primary renal disease such as nephrosclerosis, glomerulonephritis, pyelonephritis—as well as several other nephritic syndromes which will be discussed briefly later, or if the primary process is an obstructive lesion in the lower urinary tract with secondary involvement of the renal structures, so-called hydronephrosis.

The first thing that comes to mind in considering the obstructive lesions in a middle-aged male patient is of course prostatic hypertrophy. The patient, however, at 49 years is a little too young for the usual type of prostatic disease and the "questionably enlarged prostate" is not quite adequate to fit this picture. Likewise, the duration of two months symptoms is inadequate to

produce the extremes of renal failure if this were our diagnosis. Benjamin Brody long ago said—"When the hair becomes grey and thin, when there is found a white zone about the cornea, at the same time ordinarily, and I dare say invariably, the prostate increases in volume." This stage in life usually occurs past 50, rather than before it. There is one type of so-called "median bar" hypertrophy which I was surprised to learn from my recent research is not, technically speaking, a true component of the prostate. This tissue is comprised of both fibrous and glandular tissue. It is situated just distal to the trigone at the urethral orifice in the region of the verumontanum. It tends to grow upward from the floor of the urethra and soon produces a ledge or ridge across the base of the bladder which serves to impede the outflow of urine. Involvement of this portion of the urinary tract is usually secondary to inflammatory disease of the urethra and prostate. In addition to offering mechanical obstruction to the outflow of urine from the bladder, there is also interference to the normal action of the internal sphincter in cases of median bar involvement. Greater intravesical pressure is required to maintain urinary flow. This results in gradual hypertrophy of the bladder muscles and eventually trabeculation, saccululation, and bladder dilatation follow, and complete evacuation of the urine becomes impossible and, as the bladder fails, associated renal dysfunction results. The course of this disease is usually modified by infection and frequently by diverticuli of the bladder, stone formation, and neoplasm. Cases of so-called "silent uremia" due to this type of involvement of the posterior urethra have been described and I wonder if we are not dealing with this type of process in the case at hand. The finding of pus in the urine may not be a constant factor as described in this case and the urine culture findings of colon bacillus and Staph aureus organisms would lend support to this diagnosis. Once the kidney is damaged severely, the signs are those of uremia as from any other cause. The primary destructive process in hydronephrosis of this type, however, is localized in the region of the tubules to a greater degree than it is in glomerular structures of the kidney so that we can expect copious outputs of low-specific gravity urine in contrast to the scanty urine of glomerulonephritis.

Other obstructive lesions in the region of the neck of the bladder which need to be con-

sidered are congenital urethral folds which act in a valve-like fashion to prevent the outflow of urine from the bladder although they freely admit passage of a catheter. This condition is usually one of childhood although there are a few cases on record of symptoms developing during adult life. Likewise diverticulum of the bladder and tumors of the bladder neck must be considered and an obstructive tumor in the region of the trigone of the bladder cannot be ruled out in this case. One would expect, however, frankly bloody urine, more dysuria than our patient experienced, and would not expect a marked degree of renal damage due to the rapid progression of the local process.

In discussing primary upper urinary tract lesions, there are three common conditions which are responsible for most uremia and which, terminally, can be seldom differentiated; namely, malignant nephrosclerosis, glomerulonephritis, pyelonephritis. In cases of nephrosclerosis, hypertension and vascular changes are of primary importance. The history of this disease is certainly withheld from us in the case under consideration. Glomerulonephritis, the most common of all nephritides and the most likely to produce terminal uremia likewise cannot be differentiated from the history. In pyelonephritis, the history of repeated febrile episodes with pyuria, etc. is essential to diagnosis. These conditions all result in a contracted sclerotic kidney and in the terminal stages, anuria is the rule rather than polyuria. None of these conditions explain the terminal event of urinary retention in our case with obvious polyuria, unless perhaps there be some complicating factor in the lower urinary tract in addition to the primary involvement of the kidney. Of course a "double-barreled shotgun" would be a very good way out in this case and were I allowed such a choice I would perhaps seek refuge in a diagnosis of one of the above primary nephritides of longstanding complicated in its terminal stages by an obstructive lesion at the vesicle neck.

There are a few other renal syndromes which are perhaps worthy of mention. *Primary amyloid disease* of the kidney may produce extensive tubular damage and ultimately result in terminal uremia. The diagnosis is made by the Congo red test and primarily at the autopsy table. *Multiple myeloma* of the kidney has been described and the most recent theories as to its etiology indicate that the process is due to

blockage of tubules by deposits of Bence-Jones protein. We are not given the benefit of a Bence-Jones test on the urine in our case and there is no history of skeletal involvement. So-called "gouty nephritis" is produced by similar blockage of tubule structures by uric acid crystals, a rare condition which does not fit our needs. *Polycystic disease* of the kidney primarily occurs in younger individuals but can occur in mid-life resulting eventually in terminal renal failure. The condition is usually bilateral and results in destruction of the parenchymal tissues of the kidney by pressure. As a general rule, palpable masses can be made out in the abdomen and of course pyelograms are diagnostic. Again, it is my feeling that none of the above conditions logically explain the terminal urinary retention and apparent tendency to polyuria. Nephrotic involvement of the kidney due to *syphilis* has been described, and if complicated by a gummatous process in the region of the trigone of the bladder, could produce lower urinary tract obstruction. This disease process could be very easily eliminated by a negative serology; otherwise must remain in our thinking. It is, however, a rare disease. *Renal tuberculosis* deserves mention as one of the primary renal diseases which may result in uremia. It is primarily a disease of childhood but does occur at all ages. In childhood, it is usually bilateral. This is said to be true in cases under six years of age. In older individuals, it is usually unilateral and is in 60% of the cases limited to the right kidney. Primary tuberculosis in the lungs and elsewhere in the body is usually in evidence. X-ray of our patient's chest did not reveal any pathology of this type apparently. Hematuria is one of the cardinal symptoms of renal tuberculosis, but likewise bladder irritability and dysuria are present. These are absent in this case. Involvement of the trigone area of the bladder or of the posterior urethra in a tuberculous abscess could of course produce urinary tract obstruction at this level. However, one would expect much more bladder distress than our patient had and most likely over a much longer period of time. Acid-fast bacteria are found in a good percentage of cases of this sort. Cultures usually will reveal the organism.

In conclusion, I am going to defend the hypothesis that this patient had primarily a lower urinary tract obstructive disease most likely a "median bar" involvement of the posterior ure-

thra with subsequent hydronephrosis and pyelonephrosis which of course assumes that he had symptoms of consequence in his past history, which are not included in our protocol. I prefer this diagnosis out of consideration for the prominence of the obstructive manifestations of the disease on admission to the hospital and the absence of the finding of casts in the urine. I believe it is most likely that the hemorrhage occurring after catheterization was the result of pressure changes in an overdistended bladder which would be expected to undergo tremendous amounts of change as the result of the removal of nearly two litres of urine over a short period of time. It is quite possible, however, that a fungating tumor mass at the neck of the bladder might likewise have been traumatized by catheterization. I neglected earlier in the discussion to rule out stricture of the urethra on the basis of the apparent uncomplicated passage of a catheter in the Emergency Ward of the Hospital on admission.

I find it difficult, however, to ignore the fact that this man's primary pathology might well have been in the upper urinary tract and, as my second choice in diagnosis, would choose one of the common nephritides previously mentioned as the primary diagnosis, the terminal stages of the illness complicated by obstruction of the lower urinary tract possibly either from edema of the posterior urethra or some independent process occurring in this region. This diagnosis would better explain the hypertension which, although not evident in the protocol, we must assume has been present at some stage in this man's illness and it would better explain the hypertension which, although not evident in the protocol, we must assume has been present at some stage in this man's illness and it would better explain the extreme degree of anemia unless we assume that over a period of time, he had profuse hematuria which we are not led to believe from the protocol. This incidentally can occur in hydronephrosis due to lower urinary tract obstruction.

DIFFERENTIAL DIAGNOSIS

Dr. Fletcher H. Colby: May we see the x-ray films?

Dr. Stanley M. Wyman: The heart shows enlargement, chiefly of the left ventricle. The aorta is unusually tortuous for a man of this age. The appearance suggests hypertension. There is an area of ill defined, hazy density in

the middle thirds of both lung fields, with slight accentuation of the basilar markings. No unusual soft-tissue masses are visible in the film of the abdomen, and there are no unusual areas of calcification.

Dr. Colby: Can you make out the renal outlines at all?

Dr. Wyman: I cannot make them out with certainty.

Dr. Colby: You cannot say whether or not they are enlarged?

Dr. Wyman: Not with enough certainty to rely on. My guess is that they may be slightly small.

Dr. Colb: The fact that a large catheter passed more easily than a small one is of no great significance — it is not unusual for a patient to have enough spasm of the sphincter muscles for that to happen. The subsequent bleeding into the bladder is not unusual. Any overdistended bladder may bleed in this manner when rapidly emptied.

When the patient entered the hospital he obviously was critically ill. All the signs and symptoms that we are given point to a lesion of the heart, as well as to some degree of urethral obstruction, and certainly to severe renal damage. All these signs and symptoms may be integrated, although I cannot be certain.

Let us take up the obstructive feature first. The first possibility is some sort of congenital abnormality, which should have made itself evident before the age of forty-nine however. Such lesions as congenital valves and congenital stricture of the urethra occur in young persons and become evident before this age. A stricture of the urethra can be eliminated by the fact that the patient had nothing in the past history to suggest it, and in the Emergency Ward he was easily catheterized. A catheter cannot be passed easily by a stricture of any severity.

Does a patient of forty-nine have benign hypertrophy of the prostate? He may. I recently operated on a man of forty-nine who had a definitely obstructed prostate with a stone in the bladder. I said, "You are young to have this." And he answered, "I know it; my brother is fifty, and last year he had his prostate operated on."

This man entered the hospital because of difficulty in urinating and with a past history of weakness and hesitancy of the stream. Certainly, prostatic hypertrophy is a definite pos-

sibility, and probably infection as well. The dyspnea, wheezing and cough, if not asthmatic (and apparently they were not), suggest cardiac disease. This is confirmed by the systolic murmur, distended neck veins, pulmonary congestion and left ventricular hypertrophy. We can therefore say that he had hypertensive heart disease. One thing that bothers me a good deal is the fact that the blood pressure was 120 systolic, 80 diastolic, and a week later 175 systolic, 90 diastolic. Is that correct?

Dr. Edward F. Bland: Not quite. On admission it was 200 systolic, 100 diastolic.

Dr. Colby: There was not the change from 120 to 175 systolic in a week?

Dr. Bland: A later reading was 165 systolic, 90 diastolic, and as the patient became sicker the pressure was lower.

Dr. Frederick C. Goetz: The blood pressure was 125 systolic, 70 diastolic, about 3 weeks before he entered the hospital, according to his doctor.

Dr. Colby: Was he pretty sick then?

Dr. Goetz: Yes; he was.

Dr. Colby: The general signs and symptoms are those of a marked degree of renal damage in a patient who was not able to concentrate urine above 1.014. He had a low specific gravity of urine with albumin, a low serum calcium, a high phosphorus and marked anemia. The marked anemia must mean a disease of long standing. The hemoglobin was 5 gm. He also had eye signs and edema. It seems unlikely to me that such a degree of renal change in a man of forty-nine could have been associated with a hypertrophied prostate, so that I think we have to look for the chief lesion in the kidneys.

What sort of lesion could it have been? The lack of pain in the past and the other symptoms seem to eliminate a certain number of renal lesions, such as hydronephrosis and calculus disease, and the obstructive lesions that affect the upper urinary tract. On the other hand this must have been a bilateral affair, and it seems to me that the most likely possibility is a severe degree of chronic pyelonephritis. This is borne out by the urinary findings, the low specific gravity, the edema, the obviously failing renal function, the acidosis and death and uremia. He had a mixed infection, staphylococcus and colon bacilli in the urine, which is quite consistent with marked pyelonephritis. Acute pyeloneph-

ritis is much more apt to have only one organ-ism.

One condition that I cannot rule out, although I have no evidence to favor it except a pair of kidneys that were failing, is bilateral polycystic disease, which is always a possibility. This man was at the age when polycystic disease is apt to make itself evident. There was nothing in the past history to suggest it, however, such as back pain, gradual rise in blood pressure and attacks of gross hematuria. But I cannot eliminate the possibility. That is why I asked particularly about the x-ray findings, to see if we could get any additional information from Dr. Wyman.

My diagnoses are therefore hypertensive heart disease, benign hypertrophy of the prostate and uremia due to pyelonephritis. The patient probably had a pair of lungs that showed quite a bit of edema.

Dr. Tracy B. Mallory: Can you add anything, Dr. Bland?

Dr. Bland: I cannot add anything diagnostically to what Dr. Colby has said. However, the service deliberated at length regarding treatment. Here was a man with uremia, swollen neck veins and extensive edema. The one finding that I would like to emphasize is the low hemoglobin, and we have only recently appreciated that under this circumstance one can get cardiac failure with a high cardiac output and swollen veins. Hence, whatever we could do to improve the hemoglobin level might help him. In spite of the congestive failure, we gave him washed red cells, and he was on a rigid low-sodium regime. The hemoglobin increased from 5 up to 10 gm. The distention of the veins actually lessened as the hemoglobin improved. The edema was not particularly influenced, and he slowly worsened in the course of ten days and died in uremia. We did not know the exact nature of the difficulty in the genitourinary tract, because he was so desperately ill throughout the stay on the ward that further study was inadvisable. We thought it was due to obstruction, back pressure on the kidneys and, most likely, infection.

CLINICAL DIAGNOSIS

Uremia, cause unknown.

DR. COLBY'S DIAGNOSIS

Hypertensive heart disease.

Benign hypertrophy of the prostate.

Uremia, due to pyelonephritis.

ANATOMICAL DIAGNOSIS

Benign prostatic hypertrophy, with obstruction.

Hypertrophy of bladder.

Hydronephrosis, bilateral.

Parathyroid hyperplasia, ascending, slight.

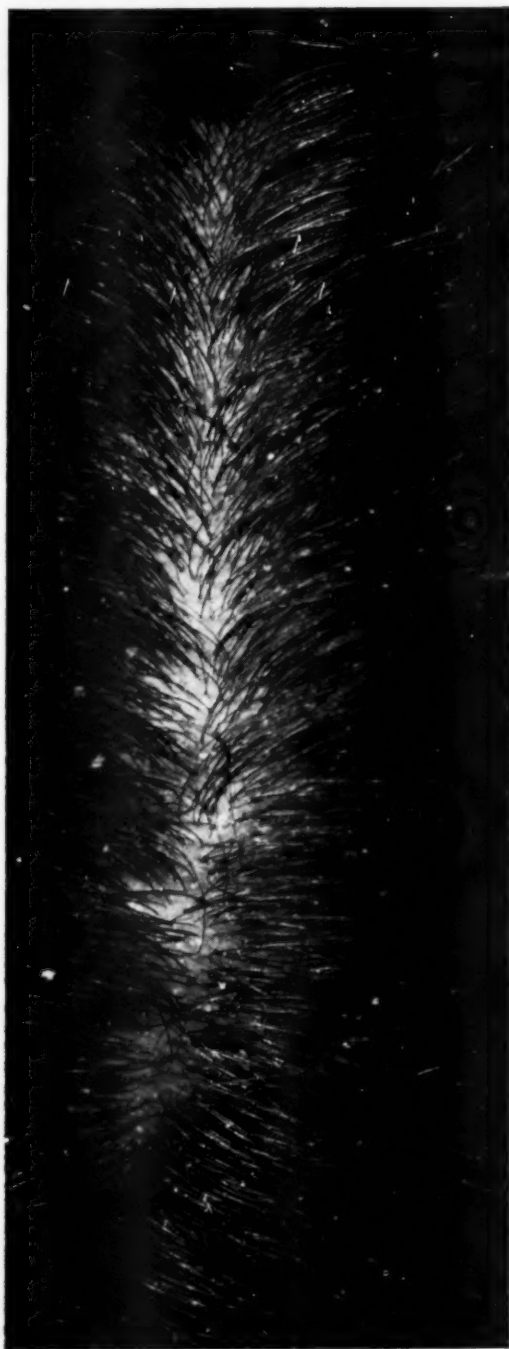
PATHOLOGICAL DISCUSSION

Dr. Mallory: This man died purely and simply as the result of prostatic obstruction, despite his comparative youth. The story reminded me of a graduate student I had a number of years ago who shortly after he arrived impressed me as being far less bright than the average. Then I began to fancy that I smelled a slight uremic breath and referred him to Dr. Chute, who found that he had an enlarged prostate, with severe obstruction, at the age of forty-three years. Following a transurethral resection his mentality improved considerably.

The prostate in the case under discussion was symmetrically enlarged, and the bladder was enormously hypertrophied, the muscular wall measuring over 1 cm. in thickness. There were numerous incipient diverticula but none that penetrated through the entire thickness of the bladder wall. Each ureter measured 1.5 cm. in circumference. The kidneys were small. The pelves were grossly dilated, but the cortex of each kidney ranged from 0 to at most 3 mm. in thickness. All traces of pyramids had disappeared.

Microscopical sections of the kidney showed almost complete atrophy of the tubules, persistent glomeruli and minimum interstitial inflammation — a characteristic picture of hydronephrotic atrophy. The lungs at autopsy weighed 800 gm., which indicates about as little pulmonary edema as one can hope for in a patient dying in uremia. The heart was within normal limits, and we found nothing wrong with it.





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THE *President's* PAGE

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THE DAY THIS IS WRITTEN THE ASSOCIATED PRESS ANNOUNCED THE SCANT DEFEAT OF THE MUCH AMENDED BRICKER AMENDMENT IN THE U. S. SENATE. WITH THE ROLL CALL 60-30 IN FAVOR, SENATOR KILGORE "DASHED INTO THE CHAMBER TO CAST THE VOTE WHICH KILLED IT." SENATOR GOLDWATER VOTED FOR IT, SENATOR HAYDEN AGAINST.

OFFICERS OF YOUR ASSOCIATION URGED OUR SENATORS TO SUPPORT THE BRICKER AMENDMENT. SENATOR HAYDEN FROM THE OUTSET HAS REPEATEDLY AND FIRMLY STATED HE BELIEVED THE AMENDMENT UNNECESSARY, AND VOTED ACCORDING TO HIS CONVICTIONS. WE SINCERELY HOPE THOSE OPPOSED DO NOT LIVE TO REGRET THE DEFEAT OF THIS TREATY-CURBING LAW.

ANOTHER IMPORTANT BILL, ALSO SUPPORTED BY THE AMERICAN MEDICAL ASSOCIATION, HAS YET TO BE CONSIDERED. THE OUTCOME OF THE JENKINS-KEOGH BILL WILL PROBABLY DEPEND UPON THE TAX PICTURE IN MARCH AND THE INFLUENCE OF AN ELECTION YEAR. IT IS AN ATTEMPT TO FORESTALL UNIVERSAL SOCIAL SECURITY AND GREATER FURTHERANCE OF A WELFARE STATE BY ALLOWING THE SELF-EMPLOYED TO BUILD UP THEIR OWN SECURITY PROGRAMS THROUGH TAX EXEMPTION ON THE AMOUNTS SO SET ASIDE ANNUALLY. IT IS NOT A SUBSTITUTE FOR LIFE INSURANCE, BUT AN ADDED MEANS OF ESTABLISHING AN ESTATE AS WELL AS A RETIREMENT FUND, TAXABLE WHEN USED. IT SHOULD HAVE AN APPEAL TO YOUNGER PHYSICIANS ESPECIALLY. THERE IS AS YET NO OTHER MEANS BY WHICH A PHYSICIAN CAN DEPRECIATE HIS CAPITAL INVESTMENT IN AN EDUCATION WHICH FITS HIM TO EARN A LIVING OVER THE PERIOD HE IS GAINFULLY OCCUPIED.

EDWARD M. HAYDEN, M.D.
PRESIDENT
ARIZONA MEDICAL ASSOCIATION, INC.

Editorial

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 11 MARCH, 1954 NO. 3

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

MEDICAL EDUCATION—QUO VADIS

IN the seventy-nine medical schools in the United States approximately 27,000 undergraduates and 55,000 other medical scientists taking postgraduate work are enrolled each year. Annually more than 6,000 doctors are graduated. This is 1,000 more than a decade ago and yet not enough to supply the ever increasing demand.

The average cost of educating a young man or woman in the field of medicine has doubled in 20 years to \$10,000. Tuition fees have been increased about 165% since 1940, but they pay only about one-fifth of the bill. Contributing to

these staggering figures in this most expensive of all fields of higher education are the lengthy training period, complicated training techniques arising from recent scientific advances, the high ratio of teachers to students, and costly laboratory facilities.

In 1953, \$10,000,000 additional to meet urgent current medical school needs and to overcome equally pressing long range medical education problems was required. Obviously deficit spending cannot continue. Equally clear is it that either the standards of medical education must be lowered or more money must be supplied. The first alternative would invite disaster to American Medicine and to the nation's health. Money must come from private or government sources, the former being preferable in the preservation of freedom of education and enterprise.

18,176 doctors contributed \$1,087,375.60 to the cause in 1953 through the American Medical Education Foundation. In addition 28,307 doctors contributed approximately \$1,230,000 direct to Medical schools, or through alumni funds. American Industry gave in the same period \$1,367,979.89 to the National Fund for Medical Education.

Progress is being made, but it is apparent that the Medical profession has not yet recognized and accepted its responsibility toward Medical Education. During the past year only 8.89% of American doctors, and only 1.41% of Arizona doctors, were contributors to Medical Education through the Foundation. While contributions direct to Medical Schools and through alumni funds are worthy of commendation, yet money given through the American Medical Education Foundation, unless earmarked for a specific institution, is unrestricted and is distributed fairly to all Medical Schools thus helping the small as well as the large ones. All money contributed to Medical Education through AMEF is used down to the last penny for that purpose, not one cent being taken for administrative expense.

Industry and other segments of lay Society will support Medical Education financially, but only when the Medical profession encourages this support by setting the pace. — H.W.K.

Interesting TOPICS

Some of the Good Articles In Current Medical Journals

THE Recent Advances in Surgery of the Autonomic Nervous System. By Osler A. Abbott, M.D., Ass't. Professor of Clinical Surgery, Emory Univ. School of Medicine, Georgia. Maryland State Med. Jour., January, 1953. Quite a comprehensive article, about half of the January Journal being given up to this article, which was the J.M.T. Finney Lecture, before the Annual Meeting of the Medical and Chirurgical Faculty of the State of Maryland, April 80, 1952.

Infection in the Newborn Baby (The Charles West Lecture before the Royal College of Physicians of London, Nov. 11, 1952). By Alan Moncrieff, C.B.E., M.D., F.R.C.P., Prof. of Child Health, Univ. of London. British Medical Jour., Jan. 3, 1953.

Michigan State Med. Jour., January, 1953, is the annual Heart Number, with articles by Levine, and other notables, including an interesting article on Current Treatment of Rheumatic Fever, by Hecht, Nolke and Sheldon of Detroit, Mich., emphasizing the use of cortisone and corticotropin.

Indications for the Sterilization of Women. By Donnelly and Luck, Winston-Salem, N. C. North Carolina Medical Journal, January, 1953. A very excellent article, specifically referring to the legal situation in this state, but also with good discussion of the general indications and contra-indications for tubal ligation.

Treatment of Some of the More Common Diseases of the Rectum. By Spears, Ferguson and Murray, in Journ. of the American Medical Women's Association, January, 1953. Good article for general practitioners. Conditions discussed include anal fissure and radiation proctitis.

The Management of the Herniated Intervertebral Lumbar Disc. By Hegarty and Elkins, Cleveland, O. The Ohio State Medical Journal, January, 1953. They discuss seventeen prerequisites to diagnosis. They discourage the use of myelography. The paper is based on a follow up study of 258 surgically treated cases.

The Value of Bronchoscopy and Bronchography in the Diagnosis of Pulmonary Disease. By Herman J. Moersch, M.D., Mayo Clinic, Ro-

chester, Minn. The Journ. of the Arkansas Medical Society. February, 1953. Discusses the indications for these procedures and cautions to be observed.

Air Pollution and Cancer of the Lung. By W. C. Hueper, M. D., Chief of the Cancerigenic Research Studies Section, National Institute of Health. In Rhode Island Medical Journal, January, 1953. Discusses different types of air pollution, including tobacco smoking, and the statistical relationship of such pollution to development of lung cancer. Interesting reading. Makes you want to hold your breath when driving behind another car, or when someone blows tobacco smoke across your face. W.W.W.

OBSESITY. A very interesting Symposium on Obesity appears in the June 4, 1953 New England Journ. of Medicine. It includes five articles, as follows: Reorientation on Obesity by Pennington, Lipogenesis by Gurin, Health and Obesity by Barr, Relation of Obesity to Longevity by Dublin, and The Psychology of Overeating by Brosin.

Barr starts his article by a quotation from Leonard Williams' monograph on "Obesity;" "The unlovely condition called corpulence or obesity has been divided into three stages known respectively as the enviable, the comical, and the pitiful. Such classification is based upon a false estimate of values, for no case of obesity is enviable. Most of them are in a sense comical, and all are pitiable." He then discusses the formidable list of hazards, disabilities and discomforts associated with obesity.

Dublin states that about 1 out of 5 of the nation's adults weigh more than they should, and about 5,000,000 can be classified as obese; that is, 20 per cent above the ideal weight for the skeletal build. "From the point of view of preventive medicine and public health, overweight, because of the large number of people affected, is the leading health problem among the middle-aged and older people in this country today. At the same time, it is perhaps the one most amenable to correction. . . . Every effort, therefore, should be exerted to bring home the dangers of overweight to the people and to get them to take positive action to control their weight."



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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

It says here (in the Journal of the Michigan State Medical Society) that a Committee from a local health group has set up a scholarship in memory of the late great Dr. Bruce Douglas of Detroit . . . We'd like to say 'wonderful', and then use the opening to refer to a similar idea which was once suggested in this column. Why don't the Pima and Maricopa Medical Societies keep their eyes open for gift funds to pay for LECTURESHIPS in honor of late, great Arizona physicians? A thousand dollars each would pay for an annual lecture for ten years in honor, for instance, of Gore, Mills, Kibler, Watson, and many others.

The SKIN OF AGED PEOPLE, especially those at bedrest, may be a trial for all concerned. Dryness, itching, scratching etc., may even supercede the major illness for attention . . . The first command is to stop regular bathing, except in necessary areas. Ban the use of soap. Apply colloidal oatmeal as a skin-cleanser, or such a trade prep. as 'Aveeno'. Consider the use of 'baby oil', or a combination of olive oil and lime water, equal parts . . . If you're definitely in trouble it's no disgrace to holler for a dermatologist, if available.

The U.C.L.A. Institute of Transportation and Traffic Engineering has just reported that you should not only check your water, oil and gas before starting on a trip, but also your PSYCHOLOGY. It may prevent accidents, the unexplainable kind . . . Everyone knows that hypoxia may be a factor. Most of us, entre nous, are quite aware that an auto-hypnosis (no pun) develops, and that it can be divided into three categories: velocitization, high-speed trance, and hypnagogic hallucinations . . . But the new smash term, which may be really smashing (pun), is the 'psychology of trip geography'. It means that one may drive too far the first day; may compare previous travel times; may drive fast or long to make schedules, etc.

Almost every journal, bulletin, and newsmagazine has published the note about the new RAPID METHOD OF FINDING TUBERCLE BACILLI. Dr. Buddingh and Breuck of LSU described the injection of infectious material into an embryo yolk sac, and presto! a diagnosis in 4 days . . . Oddly the usual research leaders in that field haven't picked it up. No further reports have been made . . . It isn't jealousy, since things don't work that way. It is due to a few simple objections. There are few places which

have that kind of eggs. Eggs may contain avian tubercle bacilli. Not enough time has elapsed to allow confirmation.

Do people go to sleep when you show a LANTERN SLIDE containing data vital to your medical report? Do people groan at each successive slide? Do people fail to call you a public-speaking moron because you put too much information in too small a space? . . . The use of illegible slides is a horrible fault, and horribly common. It has such a simple way of correction: Cull out all but the points you MUST make (and save the rest for publication, with the editor will take care of it); state the points clearly in a few words or figures; then TYPE them and use them WITHOUT REDUCING THEM at all, or by more than 50 per cent.

ASPIRIN POISONING has been in the medical news, usually of children. (Adults are divided into three classes: those who take ordinary amounts; those who forget to take any; and those tight souls who break the pills in half. Normal adults don't overdose) . . . Young children take aspirin which is left available. The usual amounts are a portion of a bottle (100). Emesis, ecchymoses, flush and sweating, and unconsciousness may occur. The chief hazard is to the respiratory center, and an early acidosis may be followed at some stage by alkalosis (from hyperventilation). High fluid intake (to wash out the salicylate through the kidneys), oxygen, and vitamin K are necessary for deep effects.

Before it could be analyzed to appear here (a mere 15 months) the news about VERATRUM VIRIDE FOR HYPERTENSION, has been translated into a fairly wide clinical usage . . . The drug is not exactly new, but the work of Stearns and Ellis of Harvard gave it a new solid basis, not to mention respectability . . . Apparently it is effective. An infusion works more quickly and regularly than the drug by mouth . . . Lowering of the blood pressure may not coincide, or equal, the symptomatic effect . . . It is toxic like everything else in this world. It has yet to be shown that the drug effects the course of the disease . . . Almost certainly a lot of people will be given a lot of the drug, hypertension being what it is.

There has been some comment about a recent paragraph here concerning the incidence of CARCINOMA OF THE PROSTATE. It was cor-



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rect and factual . . . It is the second most common cancer in men. It was first publicized by Arnold Rich of Hopkins in 1934, when he told the American Urological Ass'n. that 28 per cent of men over 70 had it. The report has been confirmed since, as has his other observation that the majority of such men would not die of the lesion . . . The increasing span of life may change the prospects — but surgery and endocrine therapy may help to counterbalance. *C'est la vie.*

Two of the worst HORRORS OF TUBERCULOSIS are lessening in frequency (miliary and meningitis), but new methods should be of huge help for the cases which still occur. Des Autels and Pfuetze of Chicago have shown that the SURVIVAL RATES vary with the therapy. 'Pure' miliary responds 33 per cent to streptomycin, 83 per cent to SM and PAS, and even better when isoniazid is added . . . Those with 'pure' TB meningitis survive at the rate of 13.6 per cent treated by SM, 69 per cent by SM and PAS . . . Combined miliary and meningitis cases have a 10 per cent change to survive with SM alone, 71 per cent with SM and PAS, and the results when isoniazid is added are nearing 100 per cent survival.

The CLEVEREST ADVERTISING TRICK which concerns Arizona, and (?) medicine, and flying has just been sent out to doctors all over the United States. . . . It consists of a sack attached to an address tag (sure-fire current way to get people to open the package, they say). You loosen the draw-string and inside the bag is a pill-box. Open the pill-box and there is a huge 'horse-capsule'. Inside the capsule is a rolled up notice that TWA is prescribing a quickie vacation trip as a cure for weary bones and jangled nerves . . . Very clever, and we say that the FDA can't object to the medication.

If you're struggling along, barely able to figure out the Rh FACTOR difficulties to which humans are heir, you may not welcome this canine item . . . A dentist friend of ours has a bitch (Boxer, 3 years old) who/which is now unable to have puppies. She was sterilized, to avoid the complications occurring whenever gravid, due to being Rh negative, (with pups having erythroblastosis if they lived, we presume) . . . It would be interesting to know how long it was after the work of Wiener, et. al., that some obstetrician (or hematologist) for dogs figured out the Rh angle for his practice . . . Or did the vets know it first?

The Georgia Medical Journal has published an article about "PICK'S DISEASE", and called it 'Take Your Pick' . . . The reason is one which the editor of a medical textbook or dictionary might know, but some people don't: There is not one, not two, but FOUR diseases known by the name,

and all are different Picks. . . . A degeneration of the brain was described by Arnold Pick. A painless progressive red skin (erythromelia) was noted by F. J. Pick. Polyserositis is the (Friedel) Pick's disease. Ludwig Pick is joined with Niemann in the label applied to lipoid histiocytosis.

A group at Cook County Hospital reported a four-year study which was made to see whether the use of MINERAL OIL as a laxative interfered with the absorption of VITAMIN A. They found that oil given at mealtimes would cause a slightly low vitamin A level in the blood, but if it was given at nighttime it was harmless unless given in large doses . . . This report has been circularized, apparently by Mineral Oil People, in a clever way. A doctor in Chicago named William Fishbein sent it out as a simple office letter. How many minutes does it take you to remember whether this is the AMA-JAMA Fishbein? (Whose first name spelled backwards is SIRROM).

A 'COLD' IS A 'COLD' IS A 'COLD', even at Mayo Clinic . . . The general hypothesis is a modified title from the late Gertrude Stein. Evidence to support it comes from an article by Chris Parnall Jr., in the far-away Jour. Louisiana Med. Soc. The thesis holds true in Rochester, New York, or Minnesota. . . . There is no specific therapy. Patients won't take reassurance as the only form of treatment. Bedrest is best but usually not practicable. A fever of plus 100° means more than a 'cold'. If a WBC is elevated, it indicates infection, and the antibiotics. A sulfa may be used first, but penicillin next if no result in 24 hours. (Ask the patient about allergy to penicillin before using it). Use the hospital if there is no response in another 24 hours, or if pneumonia is known to be present. Take an x-ray of the chest . . . If the WBC is low, a virus is a likely cause. Aureo, terra, or erythromycin are then the logical drugs . . . SPECIAL NOTE—Always get a follow-up film AFTER therapy; you may miss a case of TB. (You may miss it, says G. Osler, if you don't consider TB BEFORE therapy).

NOTICE

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ARIZONA *Pharmaceutical* PAGE

"PHARMACY'S PLACE"

THE INTERRELATED and organized human activity which constitutes what we call "society" is based on the assumption that every one of the groups supposed to meet some special need has developed into its job as "the fittest" for just this kind of task and has remained the fittest by continuous adaptation to changes in general and/or particular circumstances. This holds especially true for the activities of the groups commonly called professions, requiring specialized knowledge and carrying certain definite responsibilities. For them their "to be or not to be" depends entirely on their part in, on their necessity to society.

The profession of pharmacy has developed into its job of necessity and has remained in it by its adaptability. History shows that pharmacy represents one of the early results of the tendency towards deliberate specialization which is one of the most characteristic features of modern society. It has not only held a legitimate place in, but has contributed to the development of the society.

It was the awakening of a social conscience on the part of those in power in connection with scientific and technical progress that, about 700 years ago, caused the beginning of the legal separation of pharmacy from medicine in the Western World. The importance of professional pharmacy for public welfare made itself felt very soon quite generally and has been given the recognition of the governments all over the world. As a matter of fact, in some measure the existence, non-existence and kind of legal regulation of the practice of pharmacy of the degree to and the way in which, in the country concerned, Western civilization has developed.

Now and again has the part of pharmacy in the protection of public health been confirmed authoritatively. When on December 16, 1617, shortly before the issuance of the first London pharmacopoeia, King James I of England granted the London apothecaries a charter creating the "Society of the Art and Mystery of the Apothecaries of London."

It has been the necessity to warrant the adequacy of drugs and their preparation which in all countries has caused the issuance or adoption of drug standards and the protection of a group of experts who could be entrusted with the responsibilities concerned. As early as about 1450 the duty of the apothecary to act as a controlling agent as to technical deficiencies and dangerous mistakes in medical prescriptions has been stated by the Italian physician Saladin de Asculco as follows:

"If some young and inexperienced physician prescribes revolting or disgusting drugs for some patient, then the apothecary shall not permit this to be prepared, but shall advise the physician to prescribe more palatable and better ones lest possibly the stomach of the sick may be upset by the revolting drugs."

There can hardly be any more convincing testimony to the necessity of the separation of the professions of pharmacy and medicine as well as of their close and trustful cooperation. The more the governmental measures expanded for the protection of the public from the use of adulterated or otherwise dangerous drugs, the more the pharmacists have become an indispensable link in this fight. With their distribution all over the country, their trained and reliable personnel and their traditional part in public welfare, the pharmacies are the backbone of our modern antinarcotic legislation.

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CANCER

Edward H. Bregman, M.D.
Phoenix, Arizona

THE FACILITIES for the treatment of cancer and allied diseases in Arizona are somewhat limited. In general, the larger cities such as Tucson and Phoenix are the only places where adequate surgery radium and x-ray therapy can be obtained. This often causes hardship to the patient who has a long distance to travel to the above centers.

In Phoenix, Memorial Hospital has a cancer detection center which is approved by the American College of Surgeons. This clinic has run successfully for several years, but statistically the percentage yield of carcinoma is rather low. This reduplicates the experience encountered nationally. Another difficulty that is encountered in detection centers is that private patients filter into the clinics without consent of their own physicians. This causes embarrassment. Careful screening of patients is an absolute necessity.

The first line of defense in the detection of early carcinoma is the general practitioner.

With adequate educational seminars considerable interest can be stimulated so that we all may become more cognizant of the early signs of carcinoma and other tumors.

Under the direction of Dr. Charles Kalil, the Maricopa County Tumor Clinic has been reactivated. At present, Dr. W. A. Brewer is the chairman of the clinic board. Participation is open to all physicians. This clinic has proven beneficial to the patient and the medical participants as well. The Society of Arizona Pathologists intend starting a tumor registry in the near future.

The Pima County Hospital has an active Tumor Clinic that has functioned satisfactorily since its beginning.

Out Patient Tumor Clinic may be started at St. Joseph's Hospital and Good Samaritan Hospital in Phoenix as well.

One of the greatest problems we have encountered is the transient indigent patients who suffer from malignancy. The Arizona Division of the American Cancer Society is willing to help these people. First, a careful screening is made regarding the financial and social status of the individual concerned. Secondly, their request is reviewed by physician members of the cancer society. In order to more equitably distribute the funds of the society throughout the state, no more than \$75.00 is contributed towards the care of any individual case. Practically every physician contacted has offered their services free. Many radiologists have treated these patients without cost to the cancer society.

The Arizona Cancer Society is grateful to the physicians of Arizona, because without their generous help, the funds for patient care would be exhausted quickly.

Rather than nurture any form of socialized medicine no matter how modified it may be, an educational program both for the physician and laity is the society's theme. The successful cancer seminars have brought prominence to the participants far beyond Arizona. Many of our physicians have been kind enough to address women's clubs, churches, schools and service clubs. Films are shown which educate the public to the dangers of new growths. Already, earlier tumor cases are being found by practitioners.

This project has another desirable effect. For the past few years, doctors have been criticized severely for our lack of interest in public welfare projects. The participation of our local physicians in programs like the one above outlined has done a great deal to aid in breaking down the barrier created by this criticism.

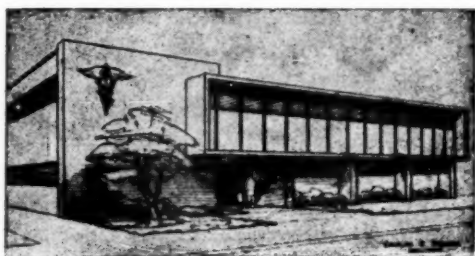
This writer was somewhat flabbergasted when he found out that election to the chairmanship of the sub-committee of cancer of the Professional Board of Arizona Medical Association automatically made one the executive chairman of the Arizona Division of the American Cancer Society. With great misgiving, I reviewed the efforts of my predecessors. Their work was admirable and the time they gave to this project entailed great self sacrifice. Among the leaders were: Dr. Jesse D. Hamer, Dr. Clarence G. Salsbury, Dr. Henry G. Williams, Dr. Roval W. Rudolph, Dr. Douglas D. Gain, Dr. Preston T. Brown, Dr. Arthur J. Present, Dr. E. Payne Palmer, Sr., and Mrs. Ruth Hartgraves.

We felt that the efforts of the society should be more generalized. Therefore, with the aid of Mrs. Mildred May, president of the society, we decided to embark on a statewide educational program. The preliminary phase of our efforts culminated in the well received Cancer Seminar. In order to go on with our future program, we will need the efforts of more physicians; men who are willing to make some minor sacrifices for the future success of the combined efforts of the cancer society and the Arizona Medical Association. Some of these men who have already assisted a great deal are: Dr. Thomas H. Bate, Dr. James D. Barger, Dr. Reed D. Shupe, Dr. Jesse D. Hamer, Dr. D. W. Melick and Mr. Julian DeVries.

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Organization PAGE

Medical Organizations and Lay Medical Groups are invited to submit news for this page to Norman A. Ross, M.D., Professional Building, Phoenix, Arizona.

On this page will be reported activities of lay and medical organizations that are a part of the physicians' citizenship responsibility.

THE ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INCORPORATED, 207 Arizona Title Building, Phoenix:

GIVE



The Easter Seal Fund Raising Drive is state-wide and begins March 18 and extends through April 18, 1954. Ninety two percent of the funds raised from this drive remain in our state. The Samuel Gompers Memorial Clinic in Phoenix with its facilities for the orthopedically handicapped pre-school and primary children, with speech therapy and parent education groups, is available to any resident of the state. However, maintenance is not provided. This clinic serves 75 youngsters, two of which at the present time do not come from Maricopa County. The regional clinics, of which six are programmed from March to June, will be directed by the local chapter. The regional clinic in March will be in Nogales on March 14, 1954.

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, 120 Broadway, New York 5, New York, has released the fact that a limited number of postdoctoral fellowships in physical medicine are available. There is also a release which is available through the national or state agency, 39 West Adams, Phoenix, Arizona, regarding the means of producing polio vaccine, and announcing the availability of such to state public health departments. The shipments will be made in the last week of March.

A third release catalogues the research grants and monies assigned to prevention and improvement of methods of treatment to medical schools. The distribution of monies since 1938 for these two projects is \$53,000,000 plus for the first and \$174,000,000 for the latter.

AMERICAN CANCER SOCIETY, INC., ARIZONA DIVISION, 1429 North 1st Street, Phoenix, Arizona:

The Officers and Directors of the ARIZONA DIVISION, of the American Cancer Society, would like to express their appreciation of the enthusiastic reception which the members of the Arizona Medical Association gave to our Second Annual CANCER SEMINAR.

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 1329 North 2nd Street, Phoenix, Arizona:

The date for the annual meeting of this organization are April 3 and 4, 1954. Meeting place Westward Ho Hotel, Phoenix.

AMERICAN RED CROSS, PACIFIC AREA OFFICE, 1550 Sutter Street, San Francisco 1, California:

The month of March presents innumerable local events associated with the annual drive for membership. This agency is organized by counties in Arizona.

THE ARIZONA HEART ASSOCIATION, P. O. Box 2688, Phoenix, Arizona.



During this month this association will complete final organization procedure and become a full-fledged state agency. County organizations are now strong and representative. Of practical interest are such booklets as "Diagnosis of Congenital Cardiac Defects in General Practice," and "Food for Your Heart," a Manual for Patient and Physician. These and many other valuable articles and booklets are available through this agency for the physician and for his distribution.

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**Red Cross Gets Salaried President**

A top-level reorganization of the National Red Cross creates a new salaried position of president at \$30,000 per year, but does not affect RC medical programs. The new president is Ellsworth Bunker, former industrialist and former U. S. ambassador to Italy and Argentina. He will take over full administrative responsibility, relieving E. Roland Harriman, who has served without pay as president and board chairman since 1950. Mr. Harriman remains as chairman of the board, which office will continue to be filled by appointment by the President of the United States.



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ISAAC L. GARRISON, M.D.

THE FOLLOWING Resolution was passed unanimously by the Maricopa County Medical Society at the December 7th meeting:

WHEREAS, our Society was deeply grieved to learn death had taken Doctor Isaac L. Garrison from his family, friends, and colleagues, and

WHEREAS, Doctor Garrison will be forever remembered for his generous gift of his medical library to the Maricopa County General Hospital and the Maricopa County Medical Society, and

WHEREAS, in his lifetime he constantly served others—first as a teacher, in later years a physician, and

WHEREAS, as a physician he delivered two generations of Phoenix babies and maintained the highest ethical standards of the medical profession, making himself respected and loved by all those who knew him, and

WHEREAS, he upheld his patriotic beliefs through action in France during World War I, NOW THEREFORE, do we, the members of the Maricopa County Medical Society, hereby resolve that this Society spread upon its minutes and make known to the family of Isaac L. Garrison its enduring respect of his personal character and professional proficiency, its deep sense of grief at his untimely death.

GEORGE B. IRVINE, M.D.

THE FOLLOWING resolution was passed unanimously by the Maricopa County Medical Society at the meeting February 1, 1954:

WHEREAS, sudden death has claimed the life of Doctor George Burgess Irvine, separating him from his family, friends and colleagues, and

WHEREAS, Doctor Irvine was a member of the Maricopa County Medical Society for 20 years, serving the Society faithfully and continually striving to uphold and raise the standards of the medical profession, and

WHEREAS, despite ill health, he developed an extensive general practice, specializing in pediatrics, and won the respect and admiration of all the patients he served, and

WHEREAS, he upheld his patriotic beliefs through action with the Army Medical Corps in France during World War I and through his membership in the William Bloys Post of the American Legion at Tempe, and

WHEREAS, he was a civic leader who unselfishly devoted his time to helping others both as an individual and as a member of various groups such as the Tempe Masonic Lodge, the El Zaribah Shrine, the Tempe Chamber of Commerce, Tempe Rotary Club and Tempe Congregational Church, and

WHEREAS, he was taken from this world before he could complete the outstanding work he had begun in medicine.

NOW THEREFORE, do we the members of the Maricopa County Medical Society, hereby resolve that this Society spread upon its minutes and make known to the family of George Burgess Irvine its everlasting respect and its deep sense of grief at his unexpected death.

A. G. RICE, M.D.

THE FOLLOWING Resolution was passed unanimously by the Maricopa County Medical Society at the December 7th meeting:

WHEREAS, a tragic accident has claimed the life of Doctor A. G. Rice, separating him from his family, friends, and colleagues, and

WHEREAS, Doctor Rice was known to all as a quiet, reserved, and thoughtful individual whose every thought was devoted to helping others, both in his professional and private life, and

WHEREAS, he continually endeavored to uphold and raise the ethical standards of the medical profession, and

WHEREAS, he was taken from his world before he could complete the fine work he had begun in medicine.

NOW THEREFORE, do we, the members of the Maricopa County Medical Society, hereby resolve that this Society spread upon its minutes and make known to the family of A. G. Rice its everlasting respect, and its deep sense of grief at his unexpected death.

CANCER SEMINAR OUTSTANDING

Edward H. Bregman, M.D., Chairman, Sub-Committee of Cancer, Professional Board. Executive Chairman, Arizona Division, American Cancer Society.

THE second annual cancer seminar, jointly sponsored by The Arizona Division of the American Cancer Society and the Arizona Medical Association, proved to be an unqualified success. The meetings were held at Paradise Inn on January 14th, 15th and 16th. 425 registrants, including physicians from New York, New Jersey, Colorado, Montana, California, Wisconsin, Texas, New Mexico, Pennsylvania and Indiana, provided an attentive audience for the excellent array of speakers.

The meeting had a twofold purpose. Firstly, to bring the newer advances in diagnosis and treatment of cancer and allied diseases to the local physicians. Secondly, to make the medical world more cognizant of the high level of medicine practised in Arizona. No long is Arizona considered a "whistle stop" medically between Chicago and Los Angeles. Dr. Joe V. Meigs stated that he was very impressed by the continued interest and intelligent questions of the Arizona physicians. To quote Dr. Anthony Curreri, Associate Professor of Surgery of the University of Wisconsin:—"The program committee and its moderators are to be highly commended for providing an outstanding program, and integrating all facets of the subject in such a manner that the general practitioner and specialist alike received academic and practical information. Moreover, the interest of the physicians was manifested by their continued attendance throughout the day, and their sustained active participation in the discussion periods. It is unheard of in medical circles to observe one third to one half of the medical profession of a state attending such a meeting."

The speakers will long be remembered for their wit, erudition and humility. Drs. Swenson, Bailey and Meigs were kind enough to see patients who presented problems to local physicians. Julian DeVries is to be complimented for the wide coverage by the press, radio and television. Drs. Meigs, Gurdjian, Bailey, Bate, Cameron and Bregman appeared on local television stations. Judging from the numerous letters received from the participants and the laity, a great boost was given to physician and pa-

tient relationship.

Among the highlights of the seminar was the stimulating panel discussion of carcinoma of the cervix conducted by Dr. Preston T. Brown of Phoenix. The panel members were Dr. O. H. Brines, Dr. L. H. Garland, and Dr. Joe V. Meigs. Dr. Meigs clearly explained the importance of the "RS and RR" sensitivity test of cervical smears. Drs. Aebersold, Pendergrass and Garland stated that in general, isotope therapy has been disappointing. They stressed the importance of isotopes in physiological studies. They felt that isotope programs should be carried out in higher institutions such as university and medical centers where facilities are provided for the proper disposal of radioactive wastes and where physicists are available at all times. The "gentle" treatment of leukemia patients and the value of nitrogen mustard in re-sensitizing a patient who has become refractory to roentgen therapy was stressed.

The excellent presentation of Drs. Bailey, Gurdjian, Swenson and Curreri will not be forgotten. The moderators, namely Drs. Dermont Melick, Preston Brown, John Eisenbeiss, Ralph Fuller, Douglas Gain, John Green, Edward Hayden, Hugh Thompson and O. O. Williams, deserve praise for the smooth and efficient way they conducted their respective panels.

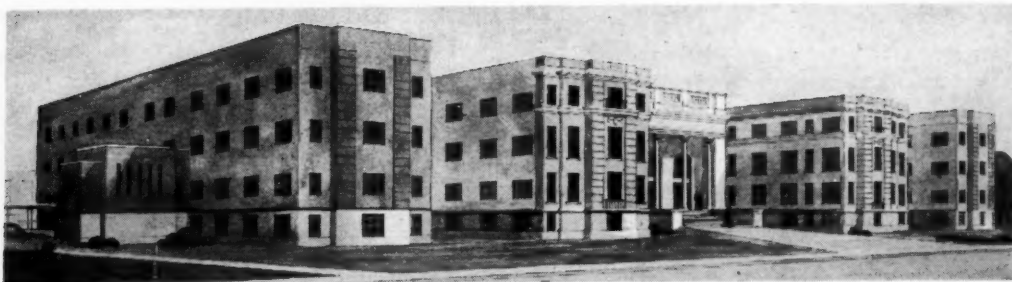
The gears are in operation for the third annual seminar. Dr. Charles Cameron, Medical and Scientific Director of the American Cancer Society, has promised to support our new effort wholeheartedly with the resources of the Society, because this meeting is assuming national importance.

The last seminar was an excellent demonstration of the feasibility of a volunteer health agency, and the medical profession cooperating to the eventual benefit of the community and society.

My heartfelt thanks go out to Mrs. Mildred F. May, Dr. James Barger, Dr. Thomas Bate, Dr. Reed Shupe and Dr. Jesse Hamer for their prodigious work in making a dream come true.

SOCIETY OF MEDICAL TECHNOLOGISTS CONVENTION

The 22nd annual National Convention of the American Society of Medical Technologists will be held at Miami Beach, Florida, June 13-17, 1954. The co-headquarters Hotels are the Delano and DiLido.



View of the new addition to Good Samaritan Hospital.

GOOD SAMARITAN HOSPITAL

TODAY, in American civilization, health occupies a high place among accepted social values. At Good Samaritan Hospital, this state of well being is constantly sought for all patients by one of the most efficient and highly trained medical staffs in the country. Service and skill are presented to all patients on a twenty-four hour basis, daily. Proof that the medical staff do realize this goal and successfully accomplish their objectives are in the following statistics: At Good Samaritan or "Good Sam" as the hospital is often affectionately called, there are 230 beds. During the past year, 15,038 patients have been admitted for treatment and 14,759 have been treated, helped or cured, and finally dismissed from the hospital. Comparison with other hospital records show this to be an excellent and outstanding achievement. In fact, it tops most records in the area, and of many hospitals in the country. There's no secret to this amazing statement. However, a simple explanation will give the reason. At Good Samaritan Hospital there is splendid evidence of co-ordinated team-work throughout the staff which consists of Administrative personnel, Doctors, nurses, technicians and non-professional workers. This smooth-running co-operation makes for efficiency, service and top-quality care and treatment for every patient who enters Good Samaritan Hospital, and it is also reflected in the courteous, interested relations between patient and staff.

With the addition of the new wing which was officially opened to the public on January 31, 1954, it will mean a bed-capacity of 100 more, bringing the total bed-capacity to 330 which will be available to the community of Phoenix. This is a marked difference and increase from the modest little hospital which

had its beginning back in 1910!

Yes, 1910 was the year when the hospital we now know as Good Samaritan first saw the light of day. It was called the Deaconess Hospital and was founded by Miss Lulu Clifton (now over eighty years of age and still residing in Phoenix) and Miss Marilla Williams who is still active in the nursing profession and who lives and works in California. In 1913 there was formal organization by the first Board of Trustees, headed by Mr. H. B. Wilkinson, Chairman of the Board. Mr. Wilkinson is now 83 and living in Phoenix. In 1919, Miss Marilla Williams presented her annual report of the Deaconess Hospital in which she stated that 636 patients had been cared for that year. Mr. J. O. Sexson was named Superintendent of Deaconess Hospital in 1920 and in March of 1928, the name was officially changed to Good Samaritan Hospital. In 1931, the new Good Samaritan Hospital on East McDowell Road was opened for inspection on January 24th.

Mr. Guy M. Hanner joined the staff at Good Samaritan Hospital as assistant Superintendent in 1945 under Mr. J. O. Sexson. Mr. Sexson was appointed Chairman of the Hospital Board of Trustees in 1949 and at that time Mr. Hanner was named Administrator. Mr. J. O. Sexson passed away on June 19th, 1953 and in August of that year, Mr. Truman Yates was appointed assistant Administrator. The annual report for the year of 1953 showed that the total number of patients cared for was 15,038.

On Sunday, January 31, 1954, after a series of strike and other set-backs, Good Samaritan proudly presented their "Open House" for the community of Phoenix. Open for inspection was the handsome new wing and at 4 p.m. the beautiful Vosburgh Chapel was dedicated by Governor Howard Pyle and his father, Reverend T. M. Pyle of Buckeye, Arizona. The ser-

vice was broadcast over Station KTAR, the NBC network.

The newly-formed Women's Auxiliary at Good Samaritan Hospital known as "Good Samaritans" acted as hostesses and escorts for the 2000 visitors who came to see the progress and accomplishments that had been realized at the hospital. Tours were conducted through the new wing, and the lovely pastel colored rooms, tastefully furnished with modern furniture, venetian blinds, private phones, individually controlled oxygen units and air-conditioning were shown to the visitors. The Chapel was on view until 4 p.m. at which time the dedication service took place. Mr. and Mrs. C. O. Vosburgh gave the Chapel to Good Samaritan at a cost of \$40,000, in gratitude for good service which they had received. The "tours" included a trip through "Surgery" where many new pieces of equipment were on display and the impressive costs were shown and the functions of the different apparatus were explained.

Mr. Guy M. Hanner has stated that he is very grateful to all who helped make this progress a realization and he hopes that Good Samaritan may continue to serve the community with the best possible medical care at all times. The staff at Good Samaritan join with their "chief" in this hope.

VACCINIA IMMUNE GAMMA GLOBULIN AVAILABLE

This letter is deemed sufficiently important that we publish it in its entirety. It is self-explanatory. — Ed.

UNIVERSITY OF CALIFORNIA MEDICAL CENTER

San Francisco 22, California

University of California Hospital

January 8, 1954

Re: Vaccinia Immune Gamma Globulin

Dear Doctor:

We believe that vaccinia immune gamma globulin has an important place in the prevention and therapy of serious complications of smallpox vaccination and in the prevention of smallpox in the exposed susceptible contacts.

We want to use this circular letter addressed to teachers of Public Health, chiefs of service of

contagion hospitals, pediatricians and Public Health officers, in order to establish a good number of contacts throughout the country with physicians who might be apt to see such complications of smallpox vaccination. These complications are, in the main:

1. Generalized vaccinia
2. Eczema vaccinatum
3. Progressive vaccinia (failure to produce specific antibodies) or vaccinia necrosum.

It is our belief that three or four such complications might be expected in any large city per year and that between 20-60 per cent of them are fatal, despite intensive fluid and antibiotic therapy. It is clear that in many of these complications the doctor feels directly involved since his judgment in vaccinating the child in the first place is open to question whenever serious complications occur.

Vaccinia immune gamma globulin is a solution of the globulin component of human blood collected from volunteer donors of the Armed Services who have been successfully vaccinated against smallpox from 4-8 weeks prior to this blood donation. We found their neutralizing antibody titers to be maximal at that time. We have tested this material in India for the specific prevention of smallpox in exposed susceptible family contacts of smallpox cases. Our experience indicates that this material is effective in preventing the disease under such circumstances. Our clinical experience in the prevention and treatment of serious complications of smallpox vaccination has been more limited but is promising.

One purpose of this letter is to invite others to contact us by telephone or telegram at the earliest possible moment when such cases are encountered in clinical practice, in contagion hospitals, in teaching centers, or in Health Department Well Baby Clinics. Upon such contact we will ship, free of charge, by Air Express, the required amount of vaccinia immune gamma globulin for early use. There is, at present, not enough material available to allow us to send vaccinia immune gamma globulin to Health Departments for storage.

Dosage:

1. Therapeutic dosage in the treatment of early cases of serious complications of smallpox vaccination: 0.3 cc./lb. intramuscularly. When

the dose is greater than 10 cc. it may be divided and given at separate sites to reduce the trauma of the injection.

2. Prophylaxis: The exact dose remains undetermined. 0.03 cc./lb. is probably the minimal effective dose. Doses of 0.06 cc./lb. to 0.12 cc./lb. would probably give more effective protection. This material should be given as early as possible after exposure to a case of smallpox and should follow smallpox revaccination (given in at least two, and preferably three insertions on the arm) by 12-24 hours. The prophylactic use of this material in vaccination would be limited to children with eczema, where a sibling is being vaccinated and household contact could be expected. A child with eczema should never be vaccinated, *regardless* of whether his lesions are dry or wet. Our present experience indicates that this material has therapeutic value even when the disease is in its 3rd or 4th day and it can generally be expected that no further lesions will crop out and that the existing lesions will involute quickly.

It is our hope that this letter will lead to wider knowledge of the availability of this special material in order to add another therapeutic tool to our handling of illnesses caused by smallpox vaccination. Telegraphic or telephone request should be addressed to C. Henry Kempe, M.D., Department of Pediatrics, University of California Hospital, San Francisco 22, California, MOntrose 4-3600, Extension 371. If calls arrive at night time, the University of California Hospital operator will notify one of the laboratory staff at one of the following three telephone numbers.

1. C. Henry Kempe, M.D., PLaza 5-3024
2. Mary Jean Morse—DIamond 4-9375
3. Melvin Lee—BErkeley 7-6610-R

Sincerely yours,

C. Henry Kempe, M.D.
Department of Pediatrics

CHK:ss

MEDICAL ASPECTS OF HOUSEWORK

A very interesting and very pertinent series of articles appear in the Journal of the American Medical Women's Association for February, 1953, on the above subject. There is a symposium from Austria, France, Italy and Finland; then an article on "The Psychosomatic Aspect of Housework,—Report from France." A later issue

of this Journal will carry articles on "Orthopedic Disabilities of Housewives" and "The Cardiac Housewife." Also there will be reports from Italy and Norway. This series of articles is being prepared by the women doctors of various nations, but should prove of great interest to all practitioners who have to deal with the physical, psychic, and emotional ills of housewives and mothers, which arise out of their home responsibilities. — W.W.W.

SANATORIUM BOUGHT BY DR. O. L. BENDHEIM

Dr. Otto L. Bendheim, has announced his acquisition of the Catalina property, 5055 N. 34th St.

The name of the establishment has been changed to Camelback Sanatorium. Only neurological and psychiatric cases will be treated.

Sanatorium is a project of the recently established Phoenix Institute of Neurology and Psychiatry which is patterned after the Institute of Living in Hartford, Conn., and the Las Encinas sanatorium in Pasadena, California.

The sanatorium and the institute will be controlled by a board of directors of which Dr. Bendheim is president. Other board members are Dr. Robert L. Beal, Dr. Edward Blank, Dr. Richard E. H. Duisberg, Dr. Frank Dunn, and Dr. William Bede McGrath, Phoenix psychiatrists, and Dr. Lindsay Beaton and Dr. Charles P. Neumann, Tucson psychiatrists.

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WHIRLPOOL DONATED TO MEMORIAL HOSPITAL POLIO WING

Odd Fellows and Rebekahs of Arizona, in a joint project of continuing aid to polio victims, have presented a therapeutic whirlpool to Me-

morial Hospital in Phoenix, polio treatment center for central and northern Arizona.

Previously the Odd Fellows and Rebekahs presented a rocking bed, used as an aid to breathing, to Memorial Hospital, and a station wagon to the Crippled Children's Home in Tucson.



Charles F. Younger, Buckeye, Grand Master of Odd Fellows of Arizona; and Mrs. Eldora Curry, Casa Grande, President of Rebekah Assembly of Arizona, look on as little Barbara Tucker, polio patient from Mesa, tries the whirlpool with the assistance of Memorial's physical therapist Gladys DuBon.

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Headquarters for the Annual Medical Convention
San Marcos Hotel, Chandler, Arizona

ANNUAL MEDICAL CONVENTION HELD AT SAN MARCOS HOTEL CHANDLER, ARIZONA

HAVE you ever had a YEN to act like a winter visitor in your own State? I know I have and now we are going to get the chance. The State Convention is being held this year at the lovely San Marcos Hotel, in Chandler, Arizona, from April 25th through April 28th. For four wonderful days you can play at being a visitor to Arizona in the Valley of the Sun, with all the fine resources of a Resort Hotel at your command — and best of all — at a fraction of the cost. There's a golf course, swimming-pool, beautiful shops, excellent food and, needless to say, fine company.

Also on the 27th and 28th of April, the General Sessions of the Medical Auxiliary meeting will be held. The first day there will be a luncheon at the San Marcos followed by the meeting which will end in plenty of time for you to relax at the pool or get ready for that big evening date with your husband and friends. If your husband will be tied up in Committee or special meetings for dinner and the evening we plan to have a DUTCH TREAT evening for the ladies and we guarantee they will have fun too.

The second day there will be a Brunch at the Arizona Country Club during which beautiful

models from Goldwater's will show us the latest Spring fashions. The following meeting will feature the installation of the new officers by our National Representative, Mrs. Jesse D. Hamer and the presentation of her new Board by Mrs. Brick Storts. This meeting, too, will close early enough for you to dash over to the enchanting town of Scottsdale to pick up some bargains at their post-season sales, then hurry back to the San Marcos to put on your very prettiest for the gala evening at the President's Ball.

Because it is my Convention, I will not be as free to enjoy all these things as can most of you, for I shall feel responsible if you do not enjoy every minute of your stay. But I will enjoy meeting all of you whom I have had the pleasure of seeing throughout the year in your own meetings and getting to know those of you who have come to Convention for the first time. It is your Convention too, for it is you who have done the splendid work that will show up in the reports of the State and County officers and I know you will be as proud and happy over the fine record of progress we have made, as I.

Until I greet you at Convention, I am always sincerely

Your President
Rowena E. Enfield
Phoenix, Arizona

PROGRAM**MONDAY, APRIL 26**

- 10:00 a.m. to 4 p.m. Registration
- 12:00 p.m. Student Nurse Loan committee luncheon and meeting. Chairman Mrs. Donald A. Polson, Phoenix.
- 2:00 p.m. School of Instruction for county presidents, presidents-elect, and program chairman. Chairman Mrs. Charles S. Powell, first vice president, Yuma.
- 3:00 p.m. Nominating Committee meeting. Chairman, Mrs. Royal W. Rudolph, Tucson.
- 6:00 p.m. Board of Directors dinner

TUESDAY, APRIL 27

- 10:00 a.m. to 11 p.m. Registration
- 12:00 p.m. Luncheon, San Marcos
- 1:00 p.m. Formal Opening Session.
Guest Speaker—Mrs. Joy Lewellen (Topic: Gamma Globulin)
- 2:00 p.m. to 4:00 p.m. Registration.
- 6:30 p.m. Dutch Treat dinner

WEDNESDAY, APRIL 28

- 10:30 a.m. Brunch—Arizona Country Club
- 1:00 p.m. Formal Opening Session, Guest Speaker—Mrs. Jesse O. Hamer, National Auxiliary Representative
Style Show by Goldwater's
General Session
Board of Directors meeting
- 6:00 p.m. to 7:45 p.m. Social Hour preceding President's Dinner Dance

MARICOPA MENTAL HEALTH ASSOCIATION

DURING the past several years, Phoenix has been without mental health service. In September 1948, the Phoenix Mental Health Center, supported by funds from the United States Public Health Service, was created. This ex-

cellent, but limited service, was available for approximately three and one-half years, and during that time welfare agencies, schools, parents, Juvenile Court and others consulted with members of the staff and referred children and parents to the Center for help. It served a real need in our community. But when in June 1952, the U. S. Public Health Service found it necessary to discontinue the service, the lay advisory committee of the Center decided that the community was not prepared to continue the service on either a private or public basis.

Now, nearly two years later, at the request of the Community Council of Phoenix, a committee headed by Rabbi A. L. Krohn and made up of representatives of the Maricopa County Medical Society, Department of County Welfare, Social Service Agencies, Juvenile Court, Junior League, P.T.A., and other educational and community service organizations was asked to investigate the need and possibility of developing a mental health organization in Maricopa County.

Investigation revealed a real need for a mental health group. As soon as its organization was completed, Doctor Otto Bendheim, chairman of the Maricopa County Medical Society's psychiatric section urged that a child guidance clinic be made the group's first objective. A county-wide survey of family service, schools and welfare organizations indicated that there were over 300 children in need of immediate psychiatric care. Approval was secured from the membership to establish a child guidance clinic, funds were secured, and the clinic will open its doors on March 1, 1954. A well-qualified child psychiatrist will head the staff which will include a trained psychiatric social worker.

The local psychiatrists and psychologists have volunteered their services to the clinic without charge. The clinic will be located in quarters provided by the Maricopa County Board of Supervisors.

Mrs. John A. Eisenbeiss,
Phoenix, Arizona

**A NEW COMMITTEE —
MENTAL HEALTH**

FROM experience gained during World War II, our doctors saw a need for a closer liaison between psychiatry and general medicine. When the House of Delegates of the A.M.A. met in June 1951 a standing committee on Mental

Health was established. The committee did not meet officially until March 27, 1952.

Auxiliary members all over the country manifested such an interest in Mental Health that the National Auxiliary set up a committee on Mental Health in 1953. Mrs. Ross P. Daniel was made chairman of this committee. She contacted each State president asking them to appoint State chairman and the same contact and appointments were used on the county level.

Mrs. Daniel says the first step in our Mental Health program is self education. Very little is being done for the mentally ill in Arizona. We do have an Arizona Mental Health Association and Pima County has an active Mental Health group. Through the efforts of the Tucson Junior League, Tucson, had a Child Guidance clinic started in November of 1953. The Junior League voted to pay \$6,000 for one year toward starting a clinic which is hoped to be a community project. They have a 19 member Board of Directors representing nine organizations. Pima County Medical Society appointed four doctors to serve on the Board. These doctors did the actual selecting of the personnel for the clinic. This clinic is the first in the state providing psychiatric care for children who have emotional problems. At the present time Phoenix has a committee, formed by the Community Council, and is making plans for a Child Guidance clinic.

As doctors wives we must take a part in these organizations and help to dispel the fears as well as the indifference about mental illness. We can help interested groups to promote good mental health programs. In 1952, Oren Root, then president of the National Association of Mental Health, said something must be done or "one out of every twelve children born in the United States this year will at some time in the course of life suffer a severe mental illness."

In Arizona we are just pioneering so let us all take the first step and start to educate ourselves, we have a job ahead.

Mrs. D. L. Secrist
Tucson, Arizona



AMERICAN GERIATRICS SOCIETY The 1954 Annual Meeting

The 11th Annual Meeting of the American Geriatrics Society will be held at the Hotel Fairmont in San Francisco just preceding the meeting of the American Medical Association. The scientific sessions of the meeting will begin Thursday afternoon, June 17, and continue through Saturday morning, June 19.

Hotel reservations should be made through the San Francisco Convention and Visitors Bureau, 200 Civic Auditorium, San Francisco 2 California. Members should reserve accommodations immediately, stating time of arrival and departure date, because the hotels expect to be filled to capacity.

The Annual Business Meeting will be held in the Fairmont Hotel Thursday morning, June 17, at 9 o'clock. The room for this meeting will be announced later. All Scientific Sessions will be held in the Nob Hill Room of the Fairmont, and the annual dinner is scheduled for the Gold Room on Friday evening, June 18.

The meeting will be open to all members of the American Geriatrics Society and to physicians and other scientists who are interested in the field of geriatrics. The program will cover many aspects of geriatric medicine, and there will be several panel discussions on such subjects as recent developments in cardiology and methods of determining operability in older patients. Outstanding clinicians and investigators will participate.

Dr. Laurance W. Kinsell, Highland Alameda County Hospital, 2701 Fourteenth Avenue, Oakland 6, California, is in charge of local arrangements for the meeting.

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